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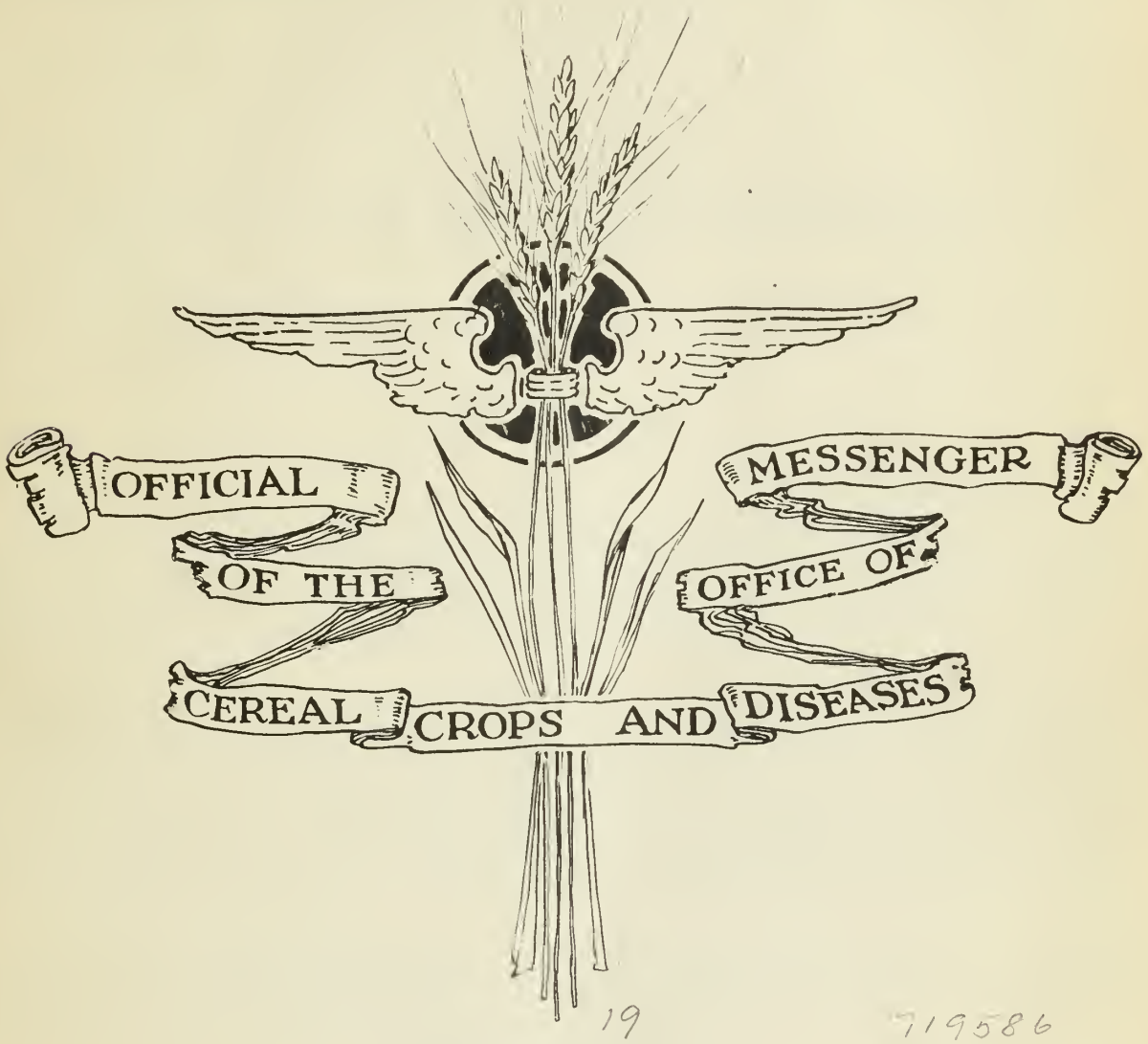

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 1

January 15, 1928
Personnel (Jan. 1-15) and Field Station (Dec. 16-31) Issue

PERSONNEL ITEMS

John W. Baringer, in charge of barberry eradication in Ohio, came to Washington on January 9 to spend about three weeks in assisting the associate pathologist in charge in the preparation of the annual report on barberry eradication and in formulating new publicity and educational methods. Mr. Baringer also will serve on a committee for standardizing survey procedure.

Dr. F. N. Briggs, assistant pathologist in cereal smut investigations conducted at Berkeley, Calif., in cooperation with the California Agricultural Experiment Station, came to Washington on January 3 to confer with officials of the Department regarding his investigations and to summarize a report of the past year's work. Dr. Briggs attended, at his own expense, the meetings of the American Association for the Advancement of Science at Nashville, Tenn., the latter part of December. Dr. Briggs will be in Washington about two months.

Charles E. Chambliss, associate agronomist in charge of rice investigations, who went to Cuba early in December to inspect experimental rice cultivation for the Tropical Plant Research Foundation, returned to this Office on January 3. He reports having seen some excellent plats of rice.

Dr. J. R. Holbert, agronomist in charge of investigations of corn root, stalk, and ear rots, in cooperation with Funk Bros. Seed Company, Bloomington, Ill., came to Washington January 4 after attending the meetings of the American Association for the Advancement of Science at Nashville, Tenn. Dr. Holbert conferred with officials of the Department regarding his investigations and the preparation of manuscripts. He left for his headquarters on January 7.

Dr. E. C. Stakman, agent in the stem-rust investigations conducted in cooperation with the Minnesota Agricultural Experiment Station, came to Washington on January 1 for one month for conferences with Department officials and to prepare manuscripts. Dr. Stalman attended, at his own expense, the meetings of the American Association for the Advancement of Science at Nashville, Tenn., the latter part of December. Dr. Stakman left Washington on January 11 for his headquarters.

D. E. Stephens, superintendent of the Sherman County Branch Station, Moro, Oreg., who has been in Washington since November 21 left for his headquarters on January 14, stopping en route at Pottstown, Pa., to confer with manufacturers of threshing machines. Mr. Stephens also will stop at Manhattan and Hays, Kans., to confer with State and Federal employees regarding cooperative experiments.

Albert F. Thiel, in charge of barberry eradication in Nebraska, came to Washington on January 5 to spend about three weeks in assisting the associate pathologist in charge in the preparation of the annual report on barberry eradication and in formulating new publicity and educational methods. Mr. Thiel also will serve on a committee for standardizing survey procedure.

VISITORS

Victor M. Buck, of La Grangeville, N. Y., who is Agricultural Missionary at the Presbyterian Mission at Ebolowa, Cameroun, West Africa, called at the Office on January 9 to obtain information about cereal production.

J. H. Craigie, of the Dominion Rust Research Laboratory, Winnipeg, Manitoba, came to Washington on January 3, after having attended the meetings of the American Association for the Advancement of Science at Nashville, Tenn. Mr. Craigie gave an address before the Washington Botanical Society on Tuesday, January 3, on the subject of his research on hereothallism in the rusts.

H. J. C. Umberger, Dean and Director of the Division of Extension, State Agricultural College, Manhattan, Kans., was an Office visitor on January 11.

H. Wexelsen, of Hjellum, Norway, was an Office visitor on January 4, and was especially interested in the breeding of wheat, oats, and barley. Since May, 1926, he has pursued graduate study in genetics at the University of California, Berkeley, where he recently received the degree of M. S. On his return to Norway he will become director of the Plant Breeding Farm at Hjellum.

MANUSCRIPTS AND PUBLICATIONS

2 A manuscript entitled "Oats in the North Central States," by T. R. Stanto and F. A. Coffman, was submitted on January 13 for publication as a Farmers' Bulletin.

Galley proof of article entitled "Further Studies on the Soil Relationships of the Mosaic Disease of Winter Wheat," by Robert W. Webb, for publication in the Journal of Agricultural Research, was read January 12.

The article entitled "A Second Recessive Factor for Brown Pericarp in Maize," by M. T. Meyers, appears in the Ohio Journal of Science 27 (6): 295-300. December, 1927. (Approved May 25, 1927.) (Cooperation between the Office of Cereal Crops and Diseases and the Ohio State University and the Ohio Agricultural Experiment Station.)

An article entitled "Barberry Species that Spread Stem Rust," by Lynn D. Hutton, appears in The National Horticultural Magazine 1928: 5-8, 2 figs. January, 1928.

Farmers' Bulletin 1540 entitled "Smuts of Wheat and Rye and Their Control," by W. H. Tisdale and V. F. Tapke, was received from the Government Printing Offic on January 12. (16 pp., 8 figs.) (Submitted Feb. 5, 1927)

1 A brief manuscript entitled "Relative Resistance of Oat Varieties to Shattering at Moro, Oregon," by T. R. Stanton, D. E. Stephens, and B. D. Bayles, was approved on January 5 for publication as a Note in the Journal of the American Society of Agronomy.

Correction

In the Cereal Courier 19 (32) occurs an error in the title of the article by T. R. Stanton, approved on December 27 for publication in a circular of the Quaker Oats Company. The title should read: "How to Grow Better Oats."

OFFICE SEMINAR NOTES

On December 22, 1927, the first of the Office Seminars to be held in the winter of 1927-28, was attended by about 25 members of the Office staff. The subject was "Bunt or Stinking Smut of Wheat." The meeting was presided over by Miss Marion A. Griffiths. D. E. Stephens, superintendent of the Sherman County Branch Station, Moro, Oreg., and Dr. E. F. Gaines, agent in the breeding of wheats for resistance to stinking smut in cooperation with the Washington State College of Agriculture, spoke on the bunt situation in the Pacific Northwest.

R. W. Smith, in charge of the cooperative cereal experiments at the Dickinson Substation, Dickinson, N. Dak., presented a brief résumé of the bunt situation in the Dakotas.

On January 5, 1928, the second Seminar was held with a program on Stem Rust of Cereals. Much interest was shown in the introductory remarks of the Chairman, Dr. H. B. Humphrey, who gave a historical sketch of the development of our knowledge of stem rust from the earliest date in 1784 when Marshall succeeded in obtaining heavy infection of rye plants grown in close proximity to some bushes of the common barberry.

Dr. E. C. Stakman presented an interesting illustrated talk on extensive cooperative studies on the epidemiology of stem rust conducted for the past 10 years.

Mr. L. D. Hutton spoke on the present status of barberry eradication and showed a number of interesting charts and maps.

Dr. C. R. Ball gave the concluding talk of the seminar. He outlined the future of barberry eradication so clearly that the audience realized more fully than ever before the great magnitude and importance of the task that lies before this generation and the next.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST STATES (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs) (December 14)

The fall season has been very dry at Tifton and seeding was very seriously delayed, However, as the result of recent rains most of the grain is coming up in fair condition. It also was somewhat dry at Athens and the seedings were somewhat later than usual. This applies generally to all of the southeastern section. Consequently very little grain has been sown this year as compared with former years.

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (January 12)

The weather in December and so far in January has been especially unfavorable to the small grains. More freezing injury or killing is now evident than in the past nine years. Winter wheat rarely shows even leaf killing in this climate, but at present nearly all soft red winter varieties show the effects of the freeze in the killing of the leaf tissue. Kanred, Turkey, and Odessa, hard red winter varieties, remain green, however.

Winter oats have been badly killed or injured, but it is too early to estimate the extent of injury. Certain of the new varieties, such as Lee, Randolph, and certain strains of Fulghum, appear to have survived as well as the Winter Turf strains.

Winter barley probably has suffered more than oats. Orel, a variety that has survived zero weather in the past with good stands, appears to be nearly destroyed, even more so than the tender Nakano Wase variety.

One series of oats in plats shows less killing than the other two, as it occupied the most productive soil. In addition, the fall vegetative growth of the oats on this particular area was unusually rank. The killing of this extra leaf growth appears to have protected the plant against the later freeze.

The daily minimum temperatures of 19, 13, 13, 10 and 11 degrees F. for the five days from January 1 to 5, inclusive, were mostly responsible for the winter injury.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY STATES (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins) (January 9)

Weather conditions in December were very unfavorable for plowing and other field operations because of frequent heavy rains and freezing temperatures.

The total precipitation for the month was 7.86 inches. For the same period last year, the rainfall was 4.11 inches. The 17-year average is 6.44 inches.

Temperatures of freezing or below were recorded seven times during the month, while in December of last year freezing temperatures were recorded only twice.

About three-fourths of the land on the Station was plowed in December. Other field work comprised mainly the cleaning of ditches, levees, and fence rows.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H.F.Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, ----------)

Iowa State College, Ames (Barberry Eradication, P. W. Rohrbaugh)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

Box 72, Post Office Building, Urbana (Barberry Eradication, ----------)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, H. S. Jackson and E. B. Mains)

Purdue University College of Agriculture, La Fayette (Barberry Eradication, W. E. Leer)

OHIO

Ohio State University, College of Agriculture, Columbus (Barberry Eradication, J. W. Baringer)

MICHIGAN

Agricultural College, East Lansing (Barberry Eradication, W. F. Reddy)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

Department of Agriculture, State Capitol Annex, Madison (Barberry Eradication, W. A. Walker)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, O. S. Aamodt)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

Agricultural Experiment Station, University Farm, St. Paul (Barberry Eradication, L. W. Melander)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (December 16)

The weather has been cold and dry. Because of the dry condition of the soil since seeding time winter wheat is not in very good condition.

The sorghums have been threshed and fanned, and the yields have been figured. The results are satisfactory. Yields in bushels per acre for the varietal sorghums are given below:

Yields of grain sorghums in bushels per acre grown in date-varietal experiments at the Woodward Field Station, Woodward, Okla., in 1927

[Bushel = 56 pounds]

Variety	C.I.No.	Bu. per acre June 10[1]	June 24[1]
Dwarf hybrid milo (H x M x 332-1)	1	45.0	37.0
Double dwarf milo	---	41.8	28.1
Heileman milo	---	44.2	33.0
Dwarf milo	332	45.8	28.3
Smith's milo	808	44.6	34.2
Fargo straight neck milo	809	48.2	38.0
Feterita	182	40.8	31.5
Spur feterita	623	41.0	29.3
Dwarf feterita	810	37.6	26.3
Dwarf hybrid feterita	1	27.2	19.4
Kaferita (Kafir seeded)	811	43.8	38.2
Kaferita (Feterita seeded)	812	45.2	36.8
Chiltex	---	43.0	38.8
Premo	---	47.8	41.4
Dwarf hegari	620	47.6	42.6
Dwarf hegari	750	52.4	46.9
Early Red Kafir	1	35.2	30.7
Wonder Kafir	---	38.2	35.4
Pink Kafir	432	37.2	36.2
Dawn Kafir	340	39.6	35.0
Sunrise Kafir	472	39.4	33.6

Continued

Variety	C.I.No.	Bu. per acre	
		June 10[1]	June 24[1]
Reed Blackhull Kafir	628	46.0	41.0
Texas Blackhull Kafir (T.S.No. 9195)	---	38.8	41.4
Sharon Kafir	813	39.8	39.4
Standard Kafir	71	40.6[2]	33.4[2]
Bishop Kafir	814	44.2[2]	37.8[2]
Darso	615	40.2[2]	32.5[2]

[1] Average of duplicate 1/45-acre plats
[2] Single 1/45-acre plats

Minimum temperature for December, -1 degree on the 8th; maximum, 71 degrees on the 6th. Precipitation, December 1 to 16, 0.03 inch; November, 0.21 inch.

(January 5)

Typical winter weather prevailed in the last half of December.

Yield of good brush, in pounds per acre, for broomcorn varieties in 1927.

Variety	C.I.No.	Pounds good brush per acre	
		Seeded June 11	Seeded June 24
Standard			
Evergreen	583	527	560
Black Spanish	327	428	456
Western Dwarf			
Oklahoma Dwarf	599	778	641
Acme	243	775	629
Scarborough	---	832[1]	684[1]

[1] Scarborough average of 3 plats; others average of 2 plats

Maximum temperature, 58 degrees on the 28th; minimum, -3 degrees on the 30th and 31st. Precipitation, 0.20 inch (snow).

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (December 16).

From October 1 to December 16 the total rainfall in this region measured 0.03 of an inch. The surface soil is dry, although the reserve moisture is sufficient in well-tilled fields to carry the winter wheat along. Since December 7, zero or sub-zero temperatures have occurred on three occasions, the lowest being -8 degrees. High winds have accompanied these low temperatures, which is rather unusual. Sufficiently moderate weather prevailed in this region up to December 1 so that wheat was making some growth. It therefore will be of interest to note at a later date what influence these low and sudden changes in temperature will have on the stand of wheat. This should be an excellent year to test out the cold resistance of such semihardy winter wheats as Superhard, Blackhull, and Nebraska No. 28, particularly when days of low temperature are followed by days of relatively moderate temperature. A continued steady freeze would be less severe.

During the last two years pasturing experiments on winter wheat have been conducted at this station on 1/10-acre plats. The amount of pasturing and the time of pasturing have been varied. The work is being continued for the coming year. The average yields for the past two years are included herewith.

Nature of experiment	Yield on fallow (Bu. per acre) 2-yr. Average	Yield on cropped land (Bu. per acre) 2-yr. Average
Severe seasonal pasturing	12.8	12.8
Fall pasturing	18.8	14.5
Check	15.6	16.7
Moderate seasonal pasturing	16.6	14.6
Moderate spring pasturing	16.9	15.6
Check	13.2	----
Late spring pasturing	11.7	----
Clipped, late spring	11.3	----

When wheat on fallow ground makes an excessive growth it seems probable that moderate pasturing is not injurious. On cropped land, when the growth of wheat is not excessive, pasturing is very likely to reduce the yield.

COLORADO

Agricultural College, Ft. Collins (Barberry Eradication, E. A. Lungren)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, R. W. May for G. F. Sprague)

College of Agriculture, University Farm, Lincoln (Barberry Eradication, A. F. Thiel)

WYOMING

College of Agriculture, University of Wyoming, Laramie (Barberry Eradicatio E. A. Lungren)

SOUTH DAKOTA

College of Agriculture, Brookings (Barberry Eradication, R. O. Bulger)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Agricultural Experiment Station, State College Station, Fargo (Barberry Eradication, G. C. Mayoue)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (January 3)

The flax hybrids in the greenhouse are developing satisfactorily. First blooms appeared on December 22 on plants receiving electric light. Plants receiving only normal daylight show no sign of preparing to bloom.

December, 1927, was the coldest month on record since January, 1916, which had the same average mean temperature of 6 degrees below zero. The average maximum temperature in December was 3 degrees, and the average minimum, -14 degrees. The minimum temperature was zero or below every day. On 16 of the 31 days the maximum temperature was zero or below. On January 1 the minimum temperature was -35 degrees and the maximum -26 degrees. The maximum temperature in December was 36 degrees on December 4; minimum, -30 degrees on December 7 and 8; precipitation, 0.77 inch.

The precipitation of November and December, which was nearly all snow, exceeded the normal precipitation for the five months from November to March, inclusive. The ground is covered with snow to an average depth of about a foot and a half. Most of the country roads are entirely impassable for cars, and practically so for teams and sleighs.

The total annual precipitation for 1927 was 20.30 inches, which is about three inches more than that of any year since 1915.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus)

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles)

State College of Agriculture, Bozeman (Barberry Eradication, W. L. Popham)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

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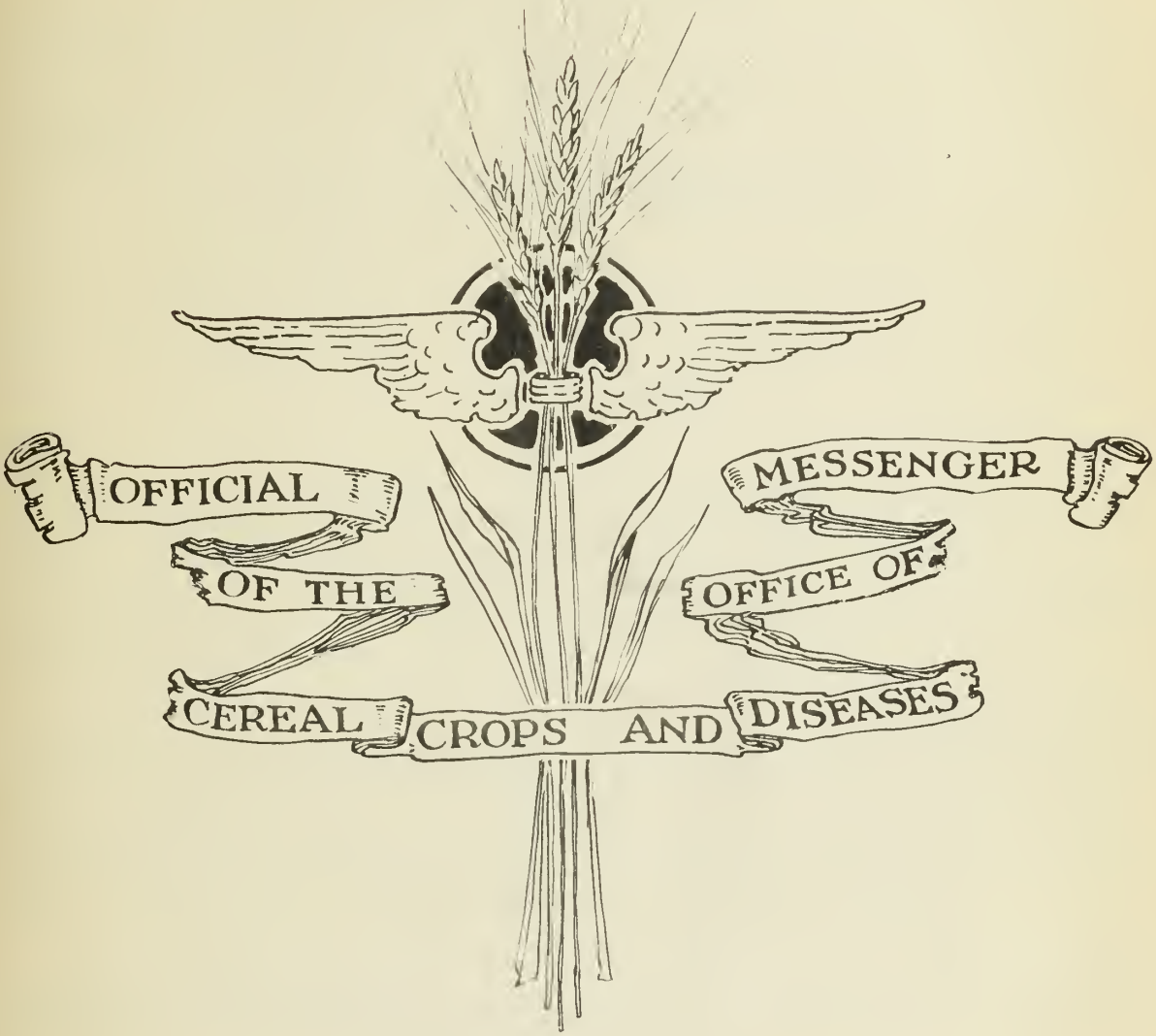

BUREAU
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UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 2

January 31, 1928
Personnel (Jan. 16-31) and Project Issue

PERSONNEL ITEMS

Dr. C. R. Ball, senior agronomist in charge, left Washington on January 31 for Ames, Iowa, to consult with cooperating officers of the Iowa State College. He will address the Farmers' Week gathering on Friday morning on Improving Cereal Varieties, Especially for Disease Resistance. The same topic will be presented at a joint seminar of the departments of Farm Crops, Genetics, and Botany and Plant Pathology on Friday afternoon.

On February 6 and 7, Dr. Ball will be at the South Dakota State College, Brookings, to confer with cooperating officials. He will address the Farmers' Week gathering on Tuesday, February 7, on the same topic as presented at Ames, Iowa. Dr. Ball will then go to Aberdeen to confer with the editor of The Dakota Farmer and to Fargo, N. Dak., to consult with cooperating officials of the North Dakota Agricultural Experiment Station. He will go to University Farm, St. Paul, Minn., about February 12, for the same purpose.

Before returning to Washington about February 20, Dr. Ball will visit the John Deere Company factories at East Moline, Ill., and will also go to Purdue University for conferences.

John W. Baringer, in charge of barberry eradication in Ohio, who came to Washington on January 9, left on January 26 for his headquarters at Columbus, Ohio. Mr. Baringer collaborated with the associate pathologist in charge of barberry eradication in the preparation of the annual report on barberry eradication for the calendar year ended December 31, 1927.

Dr. F. N. Briggs, assistant pathologist in the cooperative cereal-smut investigations conducted at Berkeley, Calif., who has been in Washington since January 3, went to Brooklyn, N. Y., on January 18 to confer with Dr. G. M. Reed, of the Brooklyn Botanic Garden, on the subject of cereal-smut investigations. He also visited the Boyce Thompson Institute at Yonkers, N. Y., to confer with Dr. William Crocker and Dr. C. R. Orton on the same subject. Dr. Briggs returned to Washington, D. C., on January 22.

Charles E. Chambliss, associate agronomist in charge of rice investigations, left Washington on January 30 for Memphis, Tenn., to attend the meetings of the Association of Southern Agricultural Workers from February 1 to 3. From Memphis Mr. Chambliss expects to go to Missouri and Arkansas to confer with officials of agricultural experiment stations and others interested in rice investigations. He will return to Washington about February 20.

Donald G. Fletcher, Secretary of The Conference for the Prevention of Grain Rust, Minneapolis, Minn., which cooperates with this Office in the barberry-eradication campaign, came to Washington on January 23 for a few days of conference with the associate pathologist in charge with regard to new publicity and educational methods.

Dr. Harry V. Harlan, senior agronomist in charge of barley investigations, left Washington on January 25 for Sacaton, Ariz., to take notes on and harvest barley nurseries and select barley varieties. Dr. Harlan also will go to San Francisco, Sacramento, Shafter, Davis, and Chico, Calif., and to Corvallis and Moro, Oreg., Pullman, Wash., Logan, Utah, and Aberdeen and Obsidian, Idaho, during the period of his stay in the West for the purpose of conferring with investigators and cooperators in barley culture and visiting barley nurseries and making selections of barley varieties.

M. A. McCall, agronomist in charge of cereal agronomy, was called to Albany, Oreg., on January 17 by the serious illness of his father.

Mrs. Alice J. Moore, stenographer-clerk in this Office since October 8, 1923, resigned her position on January 18, 1928. Miss Helen L. Smith was transferred from the Office of Vegetable and Forage Crops to fill the position left vacant by Mrs. Moore.

Hugo F. Stoneberg, assistant agronomist in the corn investigations conducted at Baton Rouge, La., in cooperation with the Louisiana Agricultural Experiment Station, was authorized to attend the meetings of the Association of Southern Agricultural Workers to be held at Memphis, Tenn., from February 1 to 3.

Albert F. Thiel, in charge of barberry eradication in Nebraska, who came to Washington on January 5, left on January 21 for his headquarters at Lincoln, Nebr. Mr. Thiel conferred with the associate pathologist in charge of barberry eradication on various phases of the eradication campaign, particularly with regard to the plans for the Barberry Eradication Conference which is to be held at Lincoln, Nebr., the week of March 19.

VISITORS

L. R. Briethaupt, who was formerly connected with this Office at Burns, Oreg., and who is now an Extension Specialist in Agricultural Economics, at the Oregon Agricultural College, Corvallis, Oreg., was an Office visitor on January 17.

Dr. Lien Fang Chao, a plant geneticist from Tze-Lo Ho, Lo-Shan District, Honan, China, who is a student in the plant breeding department of Cornell University, came to Washington the week of January 29 to spend several days in a study of the research organization of the Department of Agriculture.

Dr. W. H. Tisdale, of the E. I. du Pont de Nemours & Company, Inc., Wilmington, Del., called at the Office on January 20.

MANUSCRIPTS AND PUBLICATIONS

3 A manuscript entitled "The Relation of Temperature during the Growing Season in the Spring Wheat Area of the United States to the Occurrence of Stem Rust Epidemics," by E. C. Stakman and E. B. Lambert, was approved on January 16 for publication in Phytopathology.

4 Manuscript of Misc. Circ. 108 (Revised) entitled "Copper-Carbonate Seed Treatment for Stinking Smut of Wheat," by V. F. Tapke and F. C. Meier, was submitted for publication on January 24.

5 A manuscript entitled "Chemical Dust Seed Treatments for Dent Corn," by J. R. Holbert, C. S. Reddy, and Benjamin Koehler, was submitted on January 25 for publication in the Circular series.

6 A manuscript entitled "A Pythium Seedling Blight and Root Rot of Dent Corn," by Helen Johann, James R. Holbert, and James G. Dickson, was submitted on January 30 for publication in the Journal of Agricultural Research.

7 A brief manuscript entitled "Formaldehyde Seed Treatment for Oat Smuts," by V. F. Tapke, was submitted on January 31 for publication as a Miscellaneous Publication.

Galley proof of article entitled "Smut Susceptibility of Naturally Resistant Corn When Artificially Inoculated," by Marion A. Griffiths, for publication in the Journal of Agricultural Research, was read on January 24.

Page proof of Tech. Bul. 51 entitled "Broomcorn Experiments at the United States Dry-Land Field Station, Woodward, Okla.," by John B. Sieglinger, was read on January 18.

Tech. Bul. 38 entitled "Rate and Date of Seeding and Seed-Bed Preparation for Winter Wheat at Arlington Experiment Farm," by C. E. Leighty and J. W. Taylor, was received from the Government Printing Office on January 17 bearing date of November, 1927. (19 pp., 7 figs.) (Mss. submitted May 31, 1927.)

Department Bulletin 1489, "Corn Breeding," by Frederick D. Richey, was received from the Government Printing Office on January 21, bearing date of November, 1927. (63 pp., 12 pls., 8 figs.) (Mss. submitted August 27, 1926.)

Miscellaneous Publication No. 7, "Bread or Barberries," by Edith M. Patch, was received from the Government Printing Office on January 23, dated January, 1928. (14 pp., 8 figs.) (Mss. submitted June 20, 1927.)

The article entitled "Studies in Natural Hybridization of Wheat," by Clyde E. Leighty and J. W. Taylor, appears in the Journal of Agricultural Research 35 (10): 865-887, fig. 1. November 15,1927. (Received January 24.) (Mss. received by the Journal of Agricultural Research, May 26, 1927.)

The article entitled "Dehulling Barley Seed with Sulphuric Acid to Induce Infection with Covered Smut," by Fred N. Briggs, appears in the Journal of Agricultural Research 35 (10): 907-914. November 15, 1927. (Received January 24.) (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.) (Mss. received by the Journal of Agricultural Research, August 30, 1927.)

OFFICE SEMINAR NOTES

The third seminar in the series held by the Office of Cereal Crops and Diseases in the winter of 1927-28 was presided over by Dr. C. E. Leighty, agronomist in charge of eastern wheat investigations, who spoke on Breeding for Resistance to Leaf Rusts of Wheat and Rye. Mr. J. Allen Clark, agronomist in charge of western wheat investigations, read a paper on The Present Status of Breeding to Control Stem Rust of Wheat. Dr. F. N. Briggs, assistant pathologist in the cereal-smut investigations conducted in cooperation with the California Agricultural Experiment Station, who is at present in Washington, gave a talk on Breeding Bunt-Resistant Wheats. Unfortunately, Mr. M. A. McCall, agronomist in charge of cereal agronomy, who was to have spoken on the subject of Cooperation between Agronomy and Pathology in Developing An Adequate Cereal-Breeding Program, was not able to be present, having been called to Oregon by the serious illness of his father.

The next seminar will be held at 3:30 p.m., Thursday afternoon, February 16. Subject: The European Corn Borer. Dr. W. H. Larrimer, senior entomologist in charge of the study of Cereal and Forage Insects, of the Bureau of Entomology, will preside.

ANNUAL REPORT OF PUBLICATIONS AND MANUSCRIPTS

OFFICE OF CEREAL CROPS AND DISEASES

January 1 to December 31, 1927

In the calendar year 1927, 76 articles, papers, and abstracts were published in the various series of Department publications, in publications of cooperating State agricultural organizations, and in private journals. These represent 37 manuscripts submitted in 1927 and 39 manuscripts submitted in 1926.

In the calendar year 1927, 87 manuscripts were submitted for publication in the above mentioned channels. Of these, 37 were published, leaving 50 manuscripts in press on December 31, 1927. Six of the manuscripts submitted in 1926 and four submitted in 1925 also are still in press. Total, 60.

GENERAL OR MISCELLANEOUS

Ball, Carleton R. The Technical Bulletin as a Writer Sees It. Jour. Amer. Soc. Agron. 19 (1): 8-16. January, 1927.

Kifer, R. S., W. R. Humphries, and J. H. Martin. Harvesting Wheat with a Combined Harvester-Thresher in the Great Plains Area, 1926. A Preliminary Report. April, 1927. 26 pp., 1 fig. (Bureau of Agricultural Economics, Bureau of Public Roads, and Bureau of Plant Industry in cooperation with Texas, Oklahoma, Nebraska, and Montana colleges of agriculture.)

Leighty, C. E. Breeding Plants for Disease Resistance. Jour. Amer. Soc. Agron. 19 (3): 219-225. March, 1927. (Discussion of paper by O. S. Aamodt on "Breeding Wheat for Resistance to Physiologic Forms of Stem Rust," presented at the meeting of the American Society of Agronomy held in Washington, Nov. 19, 1926.)

_____ Theoretical Aspects of Small Grain Breeding. Jour. Amer. Soc. Agron. 19 (8): 690-704. August, 1927. (Paper read as a part of the symposium on "Procedure and Results of Small Grain Breeding" at the meeting of the American Society of Agronomy in connection with the American Association for the Advancement of Science at Philadelphia, December 31, 1926.)

_____ and W. J. Sando. A Trigeneric Hybrid of Aegilops, Triticum, and Secale. Jour. Heredity 18 (10): 433-442, figs. 1-5. October, 1927.

Swanson, Arthur F. Cereal Experiments at the Fort Hays Branch Station, Hays, Kans., 1912 to 1923. U. S. Dept. Agr. Tech. Bul. 14: 1-56, figs. 1-24. November, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.)

AGRONOMIC SUBJECTS

Barley

Florell, V. H. A Comparison of Selections of Coast Barley. Jour. Amer. Soc. Agron. 19 (7): 660-674, fig.1. July, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station from 1923 to 1926; previously with the Office of Foreign Plant Introduction, Bureau of Plant Industry.)

Harlan, Harry V. Barley Varieties New to the United States. U. S. Dept. Agr. Yearbook 1926: 164-165. 1927.

Corn

Jenkins, Merle T. A Factor for Yellow-Green Chlorophyll Color in Maize and Its Linkage Relations. Genetics 12 (6): 492-518. November, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Iowa Agricultural Experiment Station.)

Meyers, Marion T. A Second Recessive Factor for Brown Pericarp in Maize. Ohio Jour. Sci. 27 (5): 295-300. September, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Ohio State University and Ohio Agricultural Experiment Station.)

Richey, Frederick D. Corn Breeding in New Experiments. U. S. Dept. Agr. Yearbook 1926: 247-249, fig. 53. 1927.

_____ The Convergent Improvement of Selfed Lines of Corn. Amer. Nat. 61 (676):430-449. September-October, 1927.

Robinson, Joe L., and A. A. Bryan. Hybrid Corn Breeding, Iowa Yearbook Agr. 27 (1926): 40-44, illus. 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Iowa Agricultural Experiment Station and the Iowa Corn and Small Grain Growers' Association.)

Sprague, G. F. Heritable Characters of Maize. XXVII--Colored Scutellum. Jour. Heredity 18 (1): 41-44, fig. 16. January, 1927.

Stoneberg, Hugo F. The Productiveness of Corn as Influenced by the Mosaic Disease. U. S. Dept. Agr. Tech. Bul. 10: 1-18, figs. 1-7. August, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Louisiana Agricultural Experiment Station.)

Willier, J. G., and Arthur M. Brunson. Factors Affecting the Popping Quality of Pop Corn. Jour. Agr. Research 35 (7): 615-624, figs. 1-2. October 1, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.)

Oats

Stanton, T. R. Oat Varieties for the Winter Wheat Belt Yield Well. U. S. Dept. Agr. Yearbook 1926: 553-554. 1927.

_____, R. R. Childs, J. W. Taylor, and F. A. Coffman. Experiments with Fall-Sown Oats in the South. U. S. Dept. Agr. Bul. 1481: 1-32, figs. 1-9. May, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Georgia State College of Agriculture.)

_____ and E. Dorsey. Morphological and Cytological Studies of an Oat from Ethiopia. Jour. Amer. Soc. Agron. 19 (9): 804-818, figs. 1-9. September, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the department of plant breeding of Cornell University.)

_____, H. H. Love, and E. E. Down. Registration of Varieties and Strains of Oats, II. Jour. Amer. Soc. Agron. 9 (11): 1031-1037. November, 1927.

Rice

Chambliss, Charles E. Soy-Bean Rotation Increases Rice Yields Greatly. U. S. Dept. Agr. Yearbook 1926: 673-675, fig. 213. 1927.

Jones, Jenkin W. Inheritance of Awnedness in Rice. Jour. Amer. Soc. Agron. 19 (9): 830-839, fig. 1. September, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

Wheat

Aamodt, O. S. Breeding Wheat for Resistance to Physiologic Forms of Stem Rust. Jour. Amer. Soc. Agron. 19 (3): 206-218. March, 1927. (Paper read as a part of the symposium on "Plant Breeding" at the meeting of the American Society of Agronomy held in Washington, D. C., November 19, 1926.) (Cooperation between the Office of Cereal Crops and Diseases and the department of agriculture of the University of Minnesota.)

_____ A Study of Growth Habit and Rust Reaction in Crosses between Marquis, Kota, and Kanred Wheats. Phytopath. 17 (9): 573-609, figs. 1-2. September, 1927. (Cooperation between Office of Cereal Crops and Diseases and the department of agriculture of the University of Minnesota.)

Clark, J. Allen. Wheat Varieties for the Western United States. U. S. Dept. Agr. Yearbook 1926: 767-769. 1927.

_____ The Registered Varieties of American Wheat: Their Class, Origin, and Acreage. Jour. Amer. Soc. Agron. 19 (11): 953-963. November, 1927. (Paper read at the meeting of the Western Section of the American Society of Agronomy held at Moro, Oreg., June 27 to 29, 1927.)

Clark, J. Allen, J. H. Parker, and L. R. Waldron. Registration of Improved Wheat Varieties, II. Jour. Amer. Soc. Agron. 19 (11): 1037-1041. November, 1927.

Gaines, E. F. Wheat Varieties Resistant to Stinking Smut. U. S. Dept. Agr. Yearbook 1926: 769-772, figs. 259-260. 1927.

Hayes, H. K., and Olaf S. Aamodt. A Study of the Inheritance of Winter-Hardiness, Growth Habit, and Quality of Seed in Crosses between Spring and Winter Wheats. (Abs.) Anat. Rec. 34 (3): 175-176. December, 1926. (Cooperation between the Office of Cereal Crops and Diseases and the Minnesota Agricultural Experiment Station.)

_____ Inheritance of Winter Hardiness and Growth Habit in Crosses of Marquis with Minhardi and Minturki Wheats. Jour. Agr. Research 35 (3): 223-236. August 1, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Minnesota Agricultural Experiment Station.)

_____, and F. J. Stevenson. Correlation between Yielding Ability, Reaction to Certain Diseases, and Other Characters of Spring and Winter Wheats in Rod-Row Trials. Jour. Amer. Soc. Agron. 19 (10): 896-910. October, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Minnesota Agricultural Experiment Station.)

Leighty, C. E. Wheat Breeding for Resistance to Leaf Rust. U. S. Dept. Agr. Yearbook 1926: 761-763. 1927.

Martin, John H. Comparative Studies of Winter Hardiness in Wheat. Jour. Agr. Research 35 (6): 493-535, figs. 1-12. September 15, 1927.

PATHOLOGIC SUBJECTS

Imperfect and Sac Fungi

Drechsler, Charles. An Emendation of the Description of Ophiobolus heterostrophus. (Phytopathological Notes.) Phytopath. 17(6): 414. June, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Office of Vegetable and Forage Diseases, Bureau of Plant Industry.)

Holbert, James R., and James G. Dickson. Corn Varieties Resistant to Rot Diseases. U. S. Dept. Agr. Yearbook 1926: 254-259, figs. 55-57. 1927.

Leukel, R. W., James G. Dickson, and A. G. Johnson. Experiments with Dusts for Controlling Stripe Disease of Barley. Phytopath. 17 (3): 175-179. March, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station.)

Virus Diseases

McKinney, H. H. Wheat Mosaic Control Through Immune Strains. U. S. Dept. Agr. Yearbook 1926: 763-765, fig. 258. 1927.

_____ Factors Affecting Certain Properties of a Mosaic Virus. Jour. Agr. Research 35 (1): 1-12. July 1, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station.)

_____ Quantitative and Purification Methods in Virus Studies. Jour. Agr. Research 35 (1): 13-38, figs. 1-5. July 1, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station.)

Webb, Robert W. Certain Factors Influencing the Development of the Mosaic Disease in Winter Wheat. (Abs.) Phytopath. 17 (1): 41. January, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station.)

_____ Soil Factors Influencing the Development of the Mosaic Disease in Winter Wheat. Jour. Agr. Research 35 (7): 587-614, figs. 1-8. October 1, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station.)

Rusts

Allen, Ruth F. A Cytological Study of Orange Leaf Rust, Puccinia triticina Physiologic Form 11, on Malakoff Wheat. Jour. Agr. Research 34 (8): 697-714, pls. 1-7. April 15, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

Ball, C. R. Stem Rust of Wheat in 1927. (Eradicators Have a "Rusty" Inning.) Dakota Farmer 47 (23): 971, 984. December 1, 1927.

Henry, Arthur W. Flax Rust Control through Immune Strains Possible. U. S. Dept. Agr. Yearbook 1926: 366-368, fig. 94. 1927.

Mains, E. B. The Effect of Leaf Rust, Puccinia triticina, on the Seed Production of Wheat. (Abs.) Phytopath. 17 (1): 40. January, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Purdue University Agricultural Experiment Station.)

Peltier, George L., and A. F. Thiel. Stem Rust in Nebraska. Nebr. Agr. Expt. Sta. Research Bul. 42: 2-40, figs. 1-11. July, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Nebraska Agricultural Experiment Station.)

Stakman, E. C. Stem Rust in Many Varieties Attacks Grains. U. S. Dept. Agr. Yearbook 1926: 693-694. 1927.

PBarberry Eradication

Durrell, L. W., and E. A. Lungren. Barberry Eradication and Sources of Black Stem Rust in Colorado. Colo. Agr. Expt. Sta. Bul. 315: 3-15, figs. 1-10. January, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Colorado Agricultural College.)

Kempton, F. E., and L. D. Hutton. Barberry Eradication in Wheat Areas. U. S. Dept. Agr. Yearbook 1926: 158-162, fig. 15. 1927.

_____ Report of Progress in Barberry Eradication for the Calendar Year Ended December 31, 1926. 29 p. (Reprint from Cereal Courier 19 (4): 49-77. February 28, 1927. Mimeographed.)

_____ Report of Progress in Barberry Eradication for the Fiscal Year Ended June 30, 1927. 16 p. (Reprint from Cereal Courier 19 (21): 275-291. August 31, 1927. Mimeographed.)

Lungren, E. A. Report of the Barberry Eradication Campaign in Colorado. Colo. State Ent. Ann. Rpt. 17 (1925): 79-82. June, 1926. (Cooperation between the Office of Cereal Crops and Diseases and the Office of the State Entomologist and the Colorado Agricultural College.)

Melander, Leonard W., and J. H. Craigie. Nature of Resistance of Berberis spp. to Puccinia graminis. Phytopath. 17 (2): 95-114, figs, 1-4. February, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the section of plant pathology of the department of agriculture of the University of Minnesota.)

Melhus, I. E., and M. A. Smith. Small Grain Rusts and the Progress of Barberry Eradication in Iowa. Iowa Ext. Serv. Bul. 141: 1-16, figs. 1-10. July, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the extension division of the Iowa State College of Agriculture and Mechanic Arts.)

Stakman, E. C., F. E. Kempton, and Lynn D. Hutton. The Common Barberry and Black Stem Rust. U. S. Dept. Agr. Farmers' Bulletin 1544: 1-28, figs. 1-14. November, 1927.

_____, L. W. Melander, and Donald G. Fletcher. Barberry Eradication Pays. Minn. State Dept. Agr. Bul. 55: 1-24, figs. 1-15. May, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the department of agriculture of the University of Minnesota and the Minnesota State Department of Agriculture.)

Thiel, A. F. Reduce Stem-Rust Losses by Barberry Eradication. Nebr. Col. Agr. Ext. Circ. 128 (revised): 2-16, figs. 1-9. July, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Extension Service of the University of Nebraska Agricultural College.)

Walker, W. A. Progress in Grain Rust Control. Wis. State Dept. Agr. Bul. 82: 64-68, illus. December 31, 1926. (Biennial Report of the Wisconsin State Department of Agriculture for the years 1925 and 1926; published in June, 1927.) (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin State Department of Agriculture.)

_____ Black Stem Rust and the Barberry Eradication Campaign in Wisconsin. Wis. State Dept. Agr. Bul. 84: 2-20, figs. 1-7. November, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Department of Agriculture and the Agricultural Extension Service of the University of Wisconsin.)

Smuts

Briggs, Fred N. Dehulling Barley Seed with Sulfuric Acid to Induce Infection with Covered Smut (Ustilago hordei). (Abs.) Phytopath. 17 (10): 747-748. October, 1927. (Abstract presented at the 11th Annual Meeting of the Pacific Division of the American Phytopathological Society at the University of Nevada, June 23, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

Griffiths, Marion A. Smut Resistance in Corn. (Abs.) Phytopath. 17 (1): 42. January, 1927.

Johnston, C. O. Effects of Soil Moisture and Temperature and of Dehulling on the Infection of Oats by Loose and Covered Smuts. Phytopath. 17 (1): 31-36. January, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.)

Martin, J. H., and G. T. Ratliffe. Loose Kernel Smut on Feterita. (Phytopathological Notes.) Phytopath. 17 (5): 338-339. May, 1927.

Melchers, L. E. Studies on the Control of Millet Smut. Phytopath. 17 (10): 739-741. October, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.)

_____, and C. O. Johnston. Sulphur and Copper Carbonate Dusts as Efficient Fungicides for the Control of Sorghum Kernel Smut and Millet Smut. (Abs.) Phytopath. 17 (1): 52. January, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.)

Tapke, V. F. Wheats Highly Resistant to Loose Smut. U. S. Dept. Agr. Yearbook 1926: 763. 1927.

_____, and F. C. Meier. Copper-Carbonate Seed Treatment for Stinking Smut of Wheat. U. S. Dept. Agr. Misc. Circ. 108, 4 p., illus. July, 1927.

Tisdale, W. H. Smut Control by Disinfectants in Growing Favor. U. S. Dept. Agr. Yearbook 1926: 665-667, fig. 209. 1927.

Tisdale, W. H., and Marion A. Griffiths. Strains of Ustilago nuda and Certain Host Relationships. (Abs.) Phytopath. 17 (1): 42. January, 1927.

_____ Variants in Ustilago nuda and Certain Host Relationships. Jour. Agr. Research 34 (11): 993-1000. June 1, 1927.

_____, C. E. Leighty, and E. G. Boerner. A Study of the Distribution of Tilletia tritici and T. laevis in 1926. Phytopath. 17 (3): 167-174, illus. March, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Grain Division of the Bureau of Agricultural Economics.)

_____, and Benjamin Koehler. Further Studies on Flag Smut of Wheat. U. S. Dept. Agr. Circ. 424: 1-11. July, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Illinois Agricultural Experiment Station.)

_____, L. E. Melchers, and H. J. Clemmer. Strains of Kernel Smuts of Sorghum, Sphacelotheca sorghi and S. cruenta. Jour. Agr. Research 34 (9): 825-838, figs. 1-4. May 1, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Office of Dry Land Agriculture, of the Bureau of Plant Industry, and the Kansas Agricultural Experiment Station.)

Bacteriological Diseases

Elliott, Charlotte. Bacterial Stripe Blight of Oats. Jour. Agr. Research 35 (9): 811-824, figs. 1-3. November 1, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Pathological Laboratory of the Bureau of Plant Industry.)

PHYSIOLOGICAL AND CHEMICAL SUBJECTS

Jodidi, S. L. The Nitrogen Compounds of the Rice Kernel as Compared with Those of Other Cereals. Jour. Agr. Research 34 (4): 309-325. February 15, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Office of Plant Geography and Physiology of the Bureau of Plant Industry.)

Hurd-Karrer, Annie May, and Heinrich Hasselbring. Effect of Smut (Ustilago zeae) on the Sugar Content of Cornstalks. Jour. Agr. Research 34 (2): 191-195. January 15, 1927. (Cooperation between the Office of Cereal Crops and Diseases and the Office of Plant Geography and Physiology of the Bureau of Plant Industry.)

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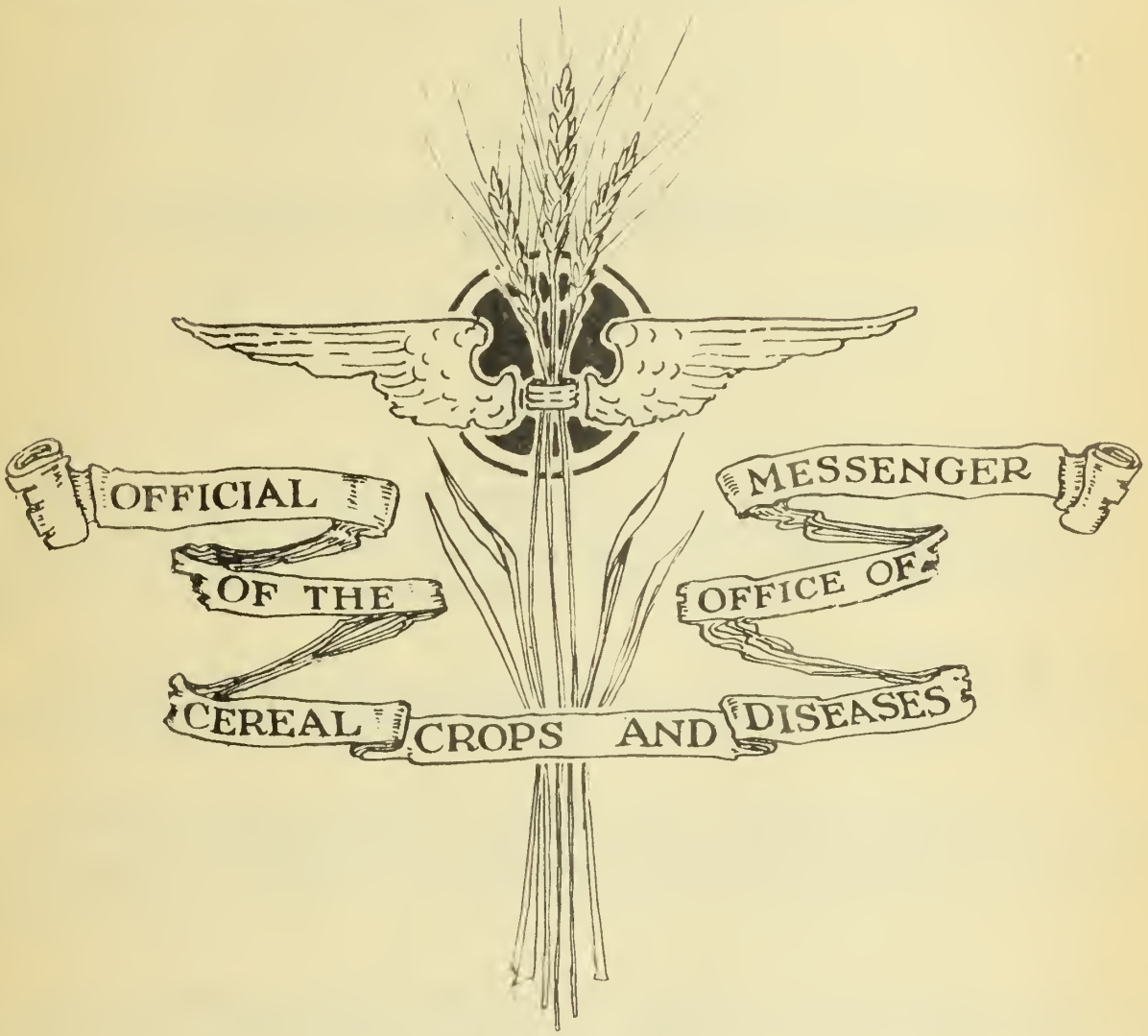
CEREAL COURIER



BUREAU
OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 3

February 15, 1928
Personnel (Feb. 1-15) and Field Station (Jan. 16-31) Issue

PERSONNEL ITEMS

Arthur A. Bryan, assistant agronomist in the cooperative corn investigations at the Iowa State College, Ames, Iowa, has been authorized to come to Washington on February 20 for two weeks in order to confer with members of the Office staff regarding the preparation of manuscripts and his annual report.

The appointment of Mrs. Zoe H. Burgess, who has been clerk in the Office of the Illinois State Leader of barberry eradication at Urbana, was terminated on February 8.

Gordon C. Curran, formerly State Leader of barberry eradication in Illinois, and who resigned his position in October, 1927, to engage in private business, was appointed on February 1 as associate pathologist in barberry eradication, in the Washington Office. Mr. Curran arrived on February 1 to take up his new duties.

A. C. Dillman, associate agronomist in charge of flax investigations, gave a brief talk on "The Daily Growth and Oil Content of the Flax Seed" before The Botanical Society of Washington at the Cosmos Club on the evening of February 7.

Dr. J. R. Holbert, agronomist in charge of investigations of corn root, stalk, and ear rots, in cooperation with Funk Bros. Seed Co., Bloomington, Ill., has been authorized to give a talk on Seed Treatments for Corn at the Illinois State Farmers' Institute at Waukegan, Ill., on February 17. Dr. Holbert will go on the same day to Madison, Wis., to confer with Dr. James G. Dickson on cooperative cereal investigations.

Miss Mary L. Martini, assistant botanist in barley investigations, left Washington on February 1 for Sacaton, Ariz., to take notes on barley in the cooperative barley nursery at the United States Field Station. On the completion of this work Miss Martini will proceed to Aberdeen, Idaho, stopping en route at points in California to make a study of barley nurseries. At Aberdeen, Idaho, she will take notes on barleys in the cooperative barley nursery at the Aberdeen Substation. Before her return to Washington, Miss Martini will consult with officials of the Utah Agricultural Experiment Station, regarding cooperative barley experiments.

Ralph W. May, assistant agronomist, formerly in charge of the cooperative cereal experiments at the Judith Basin Substation, Moccasin, Mont., and more recently in temporary charge of the cooperative cereal experiments at the North Platte Substation, North Platte, Nebr., resigned his position on February 9 to engage in private business.

M. A. McCall, agronomist in charge of cereal agronomy, who was called to Albany, Oreg., on January 17 by the serious illness of his father, returned to Washington on February 14. Mr. McCall, Sr., passed away before his son reached his bedside.

VISITORS

Dr. I. E. Melhus, of the department of botany and plant pathology, of the Iowa State College, was an Office visitor on February 14.

Prof. Yoshinori Takezaki, assistant professor of plant breeding in the department of Agriculture of the Kyoto Imperial University, Kyoto, Japan, called at the Office on February 14. Prof. Takezaki is making an extensive trip in the United States. A collection of Japanese rices presented by Prof. Takezaki in 1925 have been grown since that time on the Rice Experiment Station, Crowley, La.

MANUSCRIPTS AND PUBLICATIONS

8 A manuscript entitled "A Bacterial Stripe Disease of Broomcorn and Sorghum," by Charlotte Elliott and Erwin F. Smith, was submitted on February 3 for publication in the Journal of Agricultural Research.

Galley proof of Tech. Bul. 70 entitled "The Combined Harvester-Thresher in the Great Plains," by L. A. Reynoldson, R. S. Kifer, J. H. Martin, and W. R. Humphries, was read on February 9.

Mont. Agr. Expt. Sta. Bul. 203 entitled "Wheats in Central Montana," by Ralph W. May, was received in January, 1928, bearing date of May, 1927. (28 pp., 8 figs.) (Cooperation between the Office of Cereal Crops and Diseases and the Montana Agricultural Experiment Station at the Judith Basin Branch Station, Moccasin, Mont.) (Mss. submitted March 15, 1926.)

Mont. Agr. Expt. Sta. Bul. 209 entitled "Oats and Parley in Central Montana," by Ralph W. May, was received on February 8, bearing date of October, 1927. (24 pp., 8 figs.) (Cooperation between Office of Cereal Crops and Diseases and the Montana Agricultural Experiment Station at the Judith Basin Branch Station, Moccasin, Mont.)

Iowa Agr. Expt. Sta. Bul. 247 entitled "Iogold Oats," by L. C. Burnett, was received on February 11, bearing date of February, 1928. (pp. 187-198, figs. 1-5.) (Cooperation between the Office of Cereal Crops and Diseases and the Iowa Agricultural Experiment Station.)

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST STATES (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs) (January 31)

After checking over carefully all of our oat experiments, I find that the cold weather of January 1 to 5, inclusive, seriously damaged most of the fall-sown oats. Appler, Bancroft, and other strains of the Red Rustproof variety, were almost entirely winterkilled. Fulghum oats sown on October 1 and October 15 still show about 50 per cent of a stand. A new oat, "Norton," obtained from the Pedigreed Seed Company, Hartsville, S. C., appears to be outstanding in cold resistance. Lee, Custis, the winter forms of Fulghum, and a Fulghum selection from the Georgia Station, have shown about equal resistance to cold. A number of the varieties are being reseeded to insure a seed supply for sowing next fall. Most of the selections being grown in rod rows apparently have been severely damaged by winterkilling.

It is reported that there has been very little damage to oats and other winter grains at the Coastal Plain Experiment Station, Tifton, Ga.

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY STATES (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H.F.Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, ----------)

Iowa State College, Ames (Barberry Eradication, P. W. Rohrbaugh)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J.R.Holbert)

Box 72, Post Office Building, Urbana (Barberry Eradication, ----------)

INDIANA

Purdue University Agricultural Experiment Station, Lafayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, Lafayette (Leaf Rusts, H. S. Jackson and E. B. Mains)

Purdue University College of Agriculture, Lafayette (Barberry Eradication, W. E. Leer)

OHIO

Ohio State University, College of Agriculture, Columbus (Barberry Eradication, J. W. Baringer)

MICHIGAN

Agricultural College, East Lansing (Barberry Eradication, W. F. Reddy)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

Department of Agriculture, State Capitol Annex, Madison (Barberry Eradication, W. A. Walker)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, O. S. Aamodt)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

Agricultural Experiment Station, University Farm, St. Paul (Barberry Eradication, L. W. Melander)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

COLORADO

Agricultural College, Ft. Collins (Barberry Eradication, E. A. Lungren)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy,----------)

College of Agriculture, University Farm, Lincoln (Barberry Eradication, A. F. Thiel)

WYOMING

College of Agriculture, University of Wyoming, Laramie (Barberry Eradication, E. A. Lungren)

SOUTH DAKOTA

College of Agriculture, Brookings (Barberry Eradication, R. O. Bulger)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Agricultural Experiment Station, State College Station, Fargo (Barberry Eradication, G. C. Mayoue)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (Jan. 16)

The present winter has established some new records in both temperature and precipitation. The mean temperature for December at this station was 3.2 degrees below zero, while the normal mean for that month here is about 17 degrees above zero. Not only was the mean temperature for the month the lowest ever recorded here, but the snowfall for the month was the deepest on record, being 13.3 inches as compared with a normal December snowfall of about 4.5 inches. The total precipitation for the year was 19.56 inches, which is over 3 inches above normal. A large part of this excess precipitation was in the form of snow, the total snowfall for the year being 51.8 inches as compared with a normal annual snowfall of 28.5 inches. About a foot of snow fell on May 9 which was the beginning of favorable soil-moisture conditions after a year of depleted soil moisture.

The unusual snowstorm in May was followed by frequent rains until the latter part of June when dry weather prevented a rank growth of straw. Favorable moisture and temperature conditions later in the season produced comparatively good yields, except as affected by stem rust, with a comparatively low yield of straw. A majority of the oat varieties grown in replicated plats produced a higher weight of grain per acre than of straw when harvested fairly close to the ground. This is rather unusual at this station. This occurred with one variety of wheat, Marquis x Kota (1656.97), which yielded 1,584 pounds of grain and but 1,512 pounds of straw per acre.

The almost impassable condition of the country roads during part of December interfered with the marketing of the wheat crop. A local buyer estimates that about one-fourth of the local wheat crop is still unmarketed. During the warm weather of last week the snow melted and settled about one-half and considerable wheat was then marketed on bobsleds. The local rural mail carriers have equipped their cars with runners in front to replace the front wheels which are moved back and a caterpillar tread attached.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E.R.Ausemus)

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles)

State College of Agriculture, Bozeman (Barberry Eradication, W. L. Popham)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

WINTER OATS IN GEORGIA

From Mr. R. P. Bledsoe, Agronomist at the Georgia Experiment Station, Experiment, Ga., a correspondent of the Office, comes the following interesting information concerning the condition of winter oats in Georgia.

"The recent cold weather at Experiment has nearly wiped out the oat nursery, which was planted level; while field oats which were planted in furrows show about 50 per cent survival.

"Winter Turf seems to be entirely unhurt, which is a striking contrast to the cold spell in 1924, when it was one degree higher than it was this year. In 1924, Winter Turf killed as badly as other varieties.

"Fulghum oats this year proved to be slightly more hardy than Red Rustproof. A new oat received from Coker was much hardier than Fulghum. A winter form of Fulghum planted in a five-foot row was nearly as hardy as Winter Turf.

"Winter oats all through the Piedmont section of Georgia were very badly damaged and a great deal of them will have to be replanted, especially where planted late. The damage was not so severe in the Coastal Plain region but even there there are a large number of fields of late planted oats which will have to be replanted."

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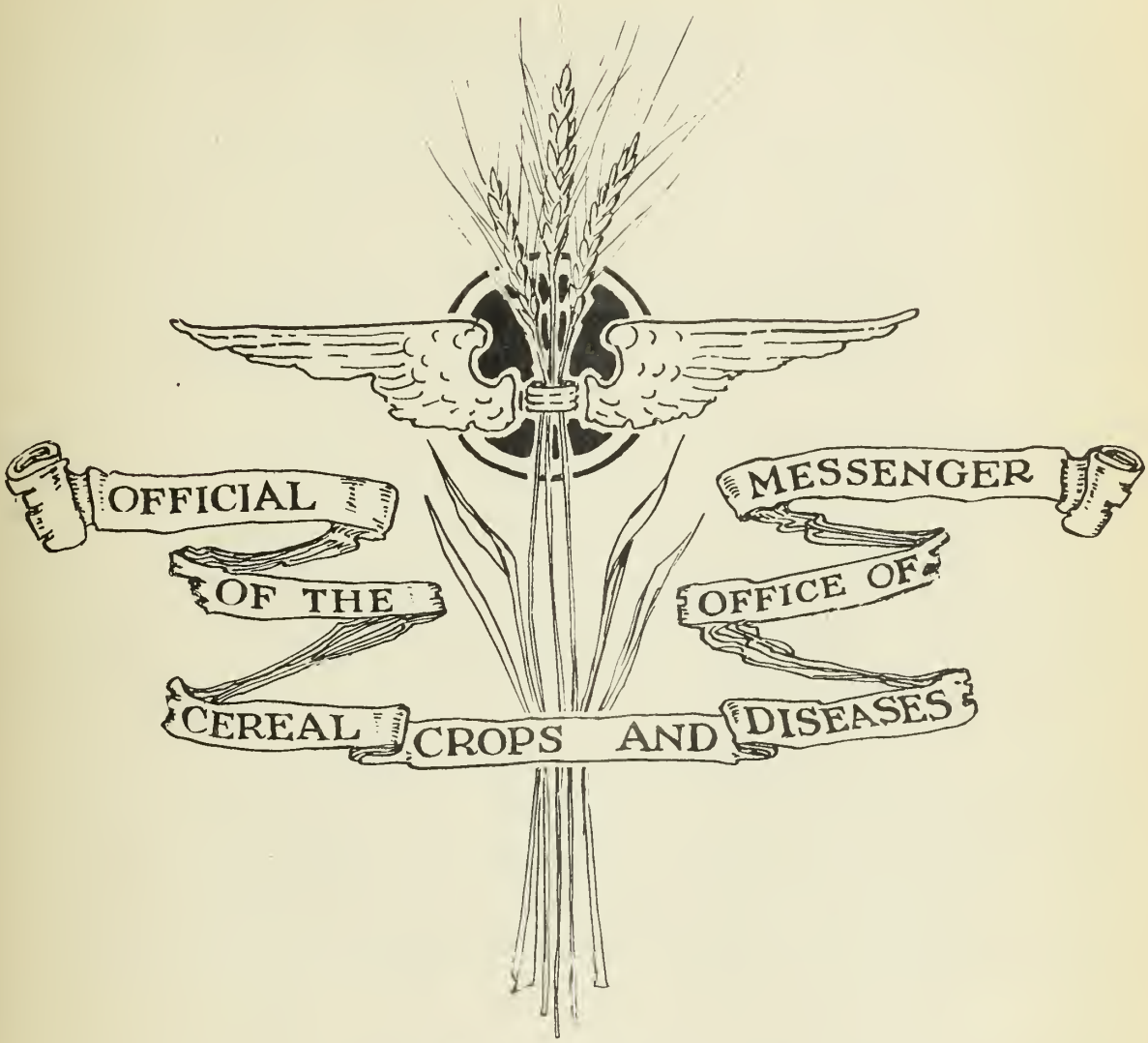
CEREAL COURIER



BUREAU
OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 4

February 29, 1928
Personnel (Feb. 16-29) and Project Issue

PERSONNEL ITEMS

Dr. C. R. Ball, senior agronomist in charge, returned to Washington on February 20 after an absence of three weeks in Iowa, North and South Dakota, and Minnesota. Conferences were held at the State Colleges of North Dakota and South Dakota and the Minnesota College of Agriculture, on proposed cooperation in combine studies and on the final revision of estimates of stem-rust loss to wheat and oats in 1927.

In Iowa Dr. Ball addressed a joint seminar of the departments of Farm Crops, Genetics, and Botany and Plant Pathology. He also appeared on Farmers' Week program on "Improving Cereal Varieties with Special Reference to Disease Resistance." In South Dakota he spoke, as per schedule, to the Farmers' Week gathering. In North Dakota he spoke to a large group of Station workers on the stem-rust situation in 1927 and the barberry eradication campaign. He spoke in Minnesota to a large group of faculty members and graduate students on the subject of the stem-rust situation in 1927 and the barberry eradication campaign.

Cornstalk harvesting machinery was studied at the Iowa Agricultural Experiment Station, and a combined husker and stalker shredder at the plant of the John Deere Co., at Moline, Ill.

The weather was unusually warm, temperatures being above freezing every day, except for a blizzard on February 17 and 18. There was very little snow cover except for drifted remnants of the heavy snows of December and not even that in Iowa. Winterkilling of wheat is thought to be severe in parts of the Ohio Valley.

Dr. F. N. Briggs, assistant pathologist in the cooperative cereal-smut investigations conducted at Berkeley, Calif., who came to Washington on January 3 for conferences with officials of the Department and to prepare his annual report, left Washington on February 14 to return to his headquarters at Berkeley.

Arthur A. Bryan, assistant agronomist in the cooperative corn investigations at the Iowa State College, Ames, Iowa, came to Washington on February 23 to confer with members of the Office staff and to prepare manuscripts and his annual report.

Charles E. Chambliss, associate agronomist in charge of rice investigations, returned to Washington on February 20 after an absence of three weeks in Tennessee, Louisiana, Arkansas, and Missouri.

A meeting of Parish agents was held on the afternoon of February 6 at the Rice Experiment Station at Crowley to discuss and devise plans for a more intensive drive on the introduction of soybeans into the prairie rice section of southwestern Louisiana. This crop is to be grown in rotation with rice. The meeting was attended by Mr. Chambliss, Mr. J. A. Evans, of the Cooperative Extension Service, Washington, D. C., and Mr. W. R. Perkins, Director of the Extension Service of Louisiana.

In the evening of the same day, there was a meeting of rice farmers who have been successful in growing soybeans in rotation with rice and those who are interested in using this crop for the control of rice weeds and improvement of the soil.

In Arkansas, Mr. Chambliss conferred with the superintendent of the rice station at Stuttgart and representatives of extension work in the State.

At Columbia, Mo., Mr. Chambliss conferred with experiment station officials regarding cooperative rice experiments that are to be conducted this year at Elsberry, Mo.

A. C. Dillman, associate agronomist in charge of seed-flax investigations, left Washington on February 24 for Minneapolis, Minn., to attend a conference with members of the Flax Development Committee, of New York City, and others interested in flaxseed production. Mr. Dillman was invited to attend this meeting by courtesy of the Flax Development Committee.

While at Minneapolis, Mr. Dillman will confer with Department and State officials regarding cooperative flax experiments at University Farm, St. Paul, Minn.

Dr. C. W. Hungerford, collaborator with the Office of Cereal Crops and Diseases in the stripe-rust investigations conducted in cooperation with the Idaho Agricultural Experiment Station, was appointed assistant dean of the College of Agriculture and vice-director of the Idaho Agricultural Experiment Station of the University of Idaho, according to the February 3 issue of The Idaho Argonaut, student paper of the University.

VISITORS

Nat C. Murray, formerly connected with the crop estimating service of this Department, and for the past five years crop statistician for Clement, Curtis & Co., of Chicago, was an Office visitor on February 16.

MANUSCRIPTS AND PUBLICATIONS

9 A manuscript entitled "Shall I Buy a Combine?" by L. A. Reynoldson, of the Bureau of Agricultural Economics, J. H. Martin, of the Office of Cereal Crops and Diseases, Bureau of Plant Industry, and W. R. Humphries, of the Bureau of Public Roads, was submitted on February 23 for publication in the Farmers' Bulletin series.

Galley proof of article entitled "English or Latin Plurals for Anglicized Latin Nouns?" by Carleton R. Ball, for publication in American Speech, was read on February 23.

Galley proof of article entitled "Further Experiments with Seed Treatments for Sweet-Corn Diseases," by C. S. Reddy and J. R. Holbert, for publication in the Journal of Agricultural Research, was read February 28.

Page proof of Tech. Bul. 70 entitled "The Combined Harvester-Thresher in the Great Plains," by L. A. Reynoldson, R. S. Kifer, J. H. Martin, and W. R. Humphries, was read February 16.

The article entitled "Oregon Gains by the Breeding of Better Wheats," by D. E. Stephens, appears in Oregon "The State Magazine" 2 (1): 8-11, illus. December, 1927--January, 1928. (Approved for publication October 28, 1927) (Cooperation between the Office of Cereal Crops and Diseases and the Oregon Agricultural Experiment Station.)

The article entitled "Immunity of Hope Wheat from Black Stem Rust Inherited as a Dominant Character," by J. Allen Clark and E. R. Ausemus, appears in the Journal of the American Society of Agronomy 20 (2): 152-159, fig. 1. February, 1928. (Approved for publication December 15, 1927)

The paper entitled "Median Terms in Adjectives of Comparison," by Carleton R. Ball, Homer L. Shantz, and Charles F. Shaw, appears in the Journal of the American Society of Agronomy 20 (2): 182-191, fig. 1. February, 1928. (This paper was presented at the Annual Meeting of the Society in Chicago, Ill., Nov. 17, 1927, by the Committee on Agronomic Terminology as a part of its annual report.)

National Crop Improvement Committee [Circ.] entitled "How to Grow Better Oats," by T. R. Stanton, was received February 27. (4 pp.)

The article entitled "Biometrical Studies on the Variation of Physiologic Forms of Puccinia graminis tritici and the Effects of Ecological Factors on the Susceptibility of Wheat Varieties," by Moses N. Levine, appears in Phytopathology 18 (1): 7-123, pl. 1, figs. 1-37. January, 1928. (Rec. February 28) (Cooperative investigations between the Office of Cereal Crops and Diseases and the Minnesota Agricultural Experiment Station.)

Circular 34 entitled "Chemical-Dust Seed Treatments for Dent Corn," by J. R. Holbert, C. S. Reddy, and Benjamin Koehler, was received from the Government Printing Office on February 29, bearing date of February, 1928. (Cooperation between the Office of Cereal Crops and Diseases and the Illinois Agricultural Experiment Station.) (Mss. submitted Jan. 25, 1928)

The following abstracts relating to the work of the Office of Cereal Crops and Diseases and which were presented at the Nineteenth Annual Meeting of the American Phytopathological Society, Nashville, Tenn., December 28, 1927, to January 1, 1928, appear in Phytopathology, vol. 18, no. 1. January, 1928.

Dietz, S. M., and L. D. Leach. The effective methods of eradicating Rhamnus species susceptible to Puccinia coronata Corda. (Abs.) Phytopath. 18 (1): 138. January, 1928. (Cooperation between the Office of Cereal Crops and Diseases and the Iowa Agricultural Experiment Station.)

Gaines, E. F. New Physiologic Forms of Tilletia tritici in Wheat. (Abs.) Phytopath. 18 (1): 139. January, 1928. (Cooperation between the Office of Cereal Crops and Diseases and the Washington Agricultural Experiment Station.)

Mains, E. B. Inheritance of Resistance to Puccinia sorghi in Maize. (Abs.) Phytopath. 18 (1): 138. January, 1928. (Cooperation between the Office of Cereal Crops and Diseases and the Purdue University Agricultural Experiment Station.)

McKinney, H. H. Virus Diseases Observed by the Allison V. Armour Expedition. (Abs.) Phytopath. 18 (1): 155. January, 1928.

OFFICE SEMINAR NOTES

On February 16, the fourth seminar in the series held by the Office of Cereal Crops and Diseases in the winter of 1927-28 considered the subject of "The European Corn Borer." Mr. F. D. Richey, agronomist in charge of corn investigations, presided and introduced Dr. W. H. Larrimer, senior entomologist in charge of the Office of Cereal and Forage Insects, of the Bureau of Entomology, who gave a brief outline of the present status of the corn-borer control and research, mainly from the entomological viewpoint.

Mr. Richey followed Dr. Larrimer and discussed the results of combating the corn borer by late planting, use of fertilizers to hasten growth, etc., and the possibility of breeding strains of corn of sufficient high-yielding power to offset the loss caused by the corn borer.

Dr. C. R. Ball, senior agronomist in charge, who was to have given a review of the corn-borer research program, was absent on a field trip.

Dr. K. F. Kellerman, associate chief of the Bureau, was present and joined in the discussion.

The fifth and last session of the Seminar will be held on March 8 at 3:30 p. m. Mr. H. H. McKinney, pathologist in charge of cereal virus disease investigations, will give an illustrated report of foreign exploration with the Allison V. Armour Expedition.

BARBERRY ERADICATION CONFERENCE

The Tenth Annual Conference of State Leaders of Barberry Eradication and the associated Rust Epidemiology workers will be held at the College of Agriculture, University Farm, Lincoln, Nebraska, from Monday, March 19, to Saturday, March 24, inclusive.

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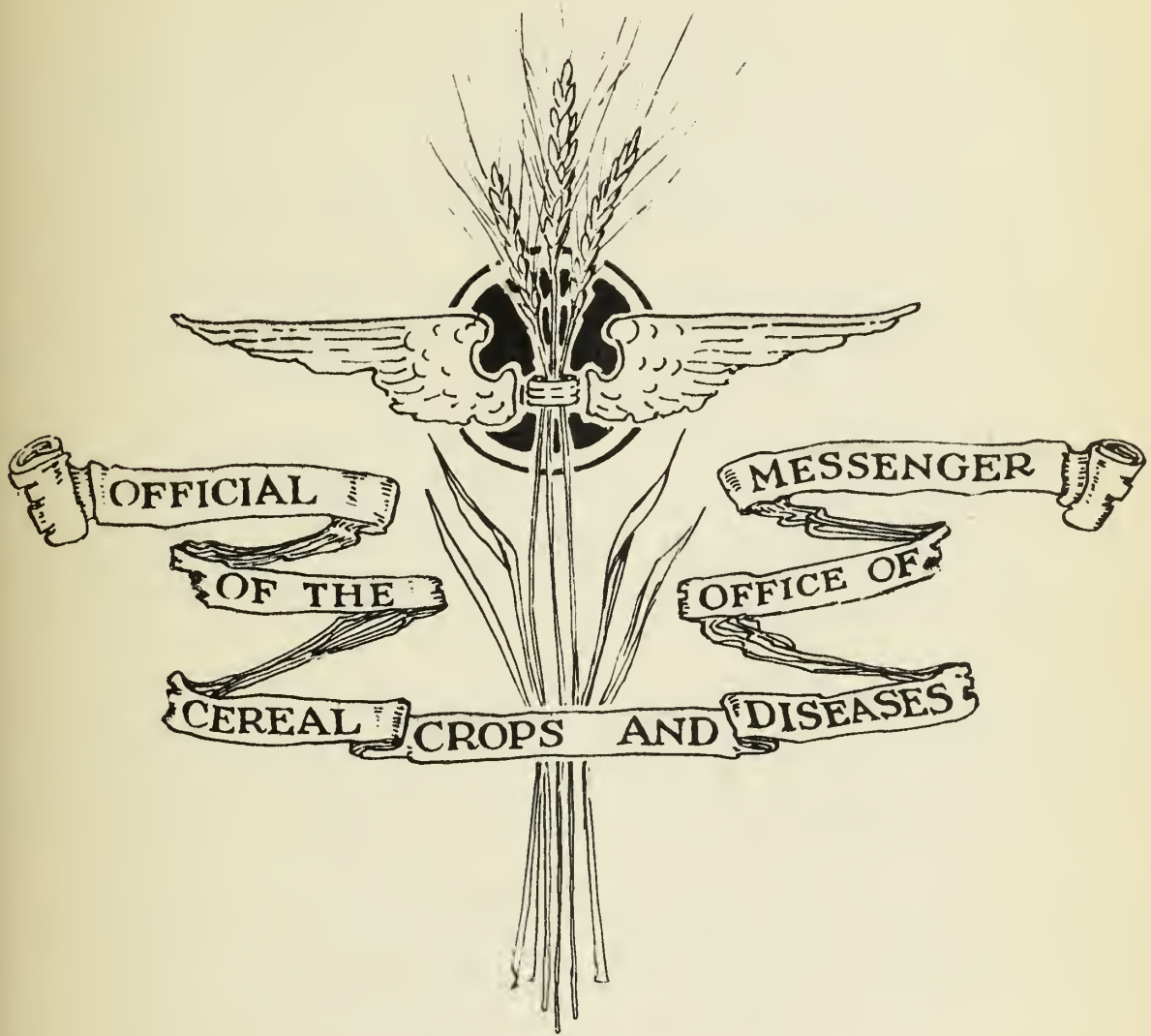
CEREAL COURIER



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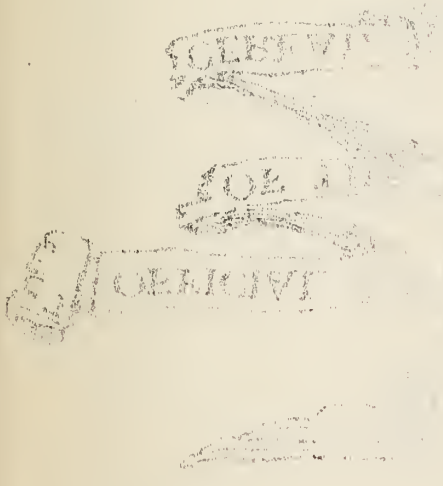

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 5

March 15, 1928
Personnel (March 1-15) and Field Station (Feb. 16-29) Issue

PERSONNEL ITEMS

Dr. C. R. Ball, senior agronomist in charge, will leave Washington on March 17 for Lincoln, Nebr., where he will be from March 19 to 24, inclusive. He will attend the Tenth Annual Meeting of the Leaders in Barberry Eradication and Stem-Rust Epidemiology and Members of Cooperating Agencies which is to review the problems of barberry eradication and decide on the procedure for the future.

While in Nebraska, Dr. Ball will speak at the Nebraska Wesleyan University and the Botanic Seminar of Nebraska University on phases of the barberry eradication program and other cereal disease projects, the former talk being broadcasted from Station WCAJ. He also will talk over the radio at Lincoln from 9:35 to 9:50 A.M., March 24, on Lessons from the Barberry Conference.

From Lincoln, Dr. Ball will go to University Farm, St. Paul, and the North Dakota Agricultural College at Fargo in connection with cooperative investigations and the conference of the States growing hard red spring wheat called by President Coulter of North Dakota to consider a unified program of breeding wheat for resistance to stem rust and other diseases.

While at St. Paul, Dr. Ball will speak to the staff of the Experiment Station on March 26 on cooperative investigation of the combined harvester-threshers. At Fargo, on March 27, following the address of welcome by President Coulter, Dr. Ball will give the opening address of the conference on the unified breeding program which will be the presentation of the viewpoints of the farmer, plant breeder, plant pathologist, extension worker, grain dealer, miller, and baker, the divergence between the viewpoints of these groups, and the need that each group shall appreciate the viewpoint of the other in order that the unified program may be effective.

Gordon C. Curran, associate pathologist in barberry eradication, left Washington on March 15 for La Fayette, Ind., and Urbana, Ill., to confer with experiment station officials regarding barberry eradication problems. Mr. Curran will attend the Tenth Annual Meeting of the Leaders in Barberry Eradication and Stem-Rust Epidemiology and Members of Cooperating Agencies to be held at Lincoln, Nebr., during the week of March 19.

A. C. Dillman, associate agronomist in charge of seed-flax investigations, returned from Minneapolis on March 2.

Dr. H. B. Humphrey, senior pathologist in charge of cereal-rust investigations, left Washington on March 7 for La Fayette, Ind., to confer with officials of the Purdue University Agricultural Experiment Station concerning cooperative cereal-rust investigations. From La Fayette, Dr. Humphrey went to University Farm, St. Paul, for the same purpose. On March 15, he expected to be at Manhattan, Kans. He will attend the Tenth Annual Meeting of the Leaders in Barberry Eradication and Stem-Rust Epidemiology and Members of Cooperating Agencies to be held at Lincoln, Nebr., during the week of March 19. On March 21 he will give a talk on the Influence of Weather Factors on Epidemics of Stem Rust in the United States.

After the Annual Meeting, Dr. Humphrey will go to Ames, Iowa, to consult officials of the Iowa Agricultural Experiment Station regarding cooperative cereal-rust investigations. He will return to Washington about March 25.

L. D. Hutton, associate pathologist in charge of barberry eradication, left Washington on March 9 to consult with State Leaders of barberry eradication and cooperators regarding eradication problems and to interview candidates to fill field positions. Mr. Hutton will be in Lincoln, Nebr., during the week of March 19 and on March 20 will give a talk on Progress and Plans of Educational and Publicity Activities Related to the Barberry Eradication Campaign before the Tenth Annual Meeting of the Leaders in Barberry Eradication and Stem-Rust Epidemiology and Members of Cooperating Agencies.

H. H. McKinney, pathologist in charge of cereal-virus-disease investigations has received two interesting letters and specimens of what appears to be a mosaic-rosette on wheat from Prof. L. E. Melchers, who is spending a year at Gizeh, Egypt.

Prof. Melchers reports that mosaic-rosette is prevalent in spring wheat near Gizeh. He says that the disease is causing considerable damage.

The specimens received show typical rosette. The mosaic is more of a yellow streak and stripe type. In this particular it resembles the yellow mosaic which is associated with the green type of mosaic on wheat in this country, and the streak and stripe diseases which occur on corn in Africa and Cuba, respectively.

Prof. Melchers' observations indicate that some of the varieties of wheat grown about Gizeh show marked resistance to the disease.

Certain spring varieties of wheat are susceptible to the wheat mosaic which occurs in the United States. However, this information was not obtained until the spring type was sown in the virus-infested soil in the autumn, and protected from winter injury. In the Mediterranean region, spring wheat is sown in the autumn, and it is sometimes subjected to a delay in development during the winter period. This period of cool weather may be sufficient to enhance the development of the disease.

G. A. Wiebe, assistant agronomist in charge of the cooperative cereal experiments at the Aberdeen Substation, Aberdeen, Idaho, who had been in Washington since the latter part of December, 1927, left on March 1 for his field headquarters.

Following is a list of the persons authorized to attend the Tenth Annual Meeting of the Leaders in Barberry Eradication and Stem-Rust Epidemiology and Members of Cooperating Agencies to be held at Lincoln, Nebr., from March 19 to 24, inclusive.

Dr. Carleton R. Ball
J. W. Baringer
R. O. Bulger
Gordon C. Curran
Dr. S. M. Dietz
G. D. George
Lynn D. Hutton
Dr. H. B. Humphrey
W. E. Leer
E. A. Lungren
Dr. E. B. Mains
G. C. Mayoue
L. W. Melander
W. L. Popham
W. F. Reddy
P. W. Rohrbaugh

VISITORS

Dr. John Grainger, of the Department of Botany, University of Leeds, Leeds, England, was an Office visitor March 1. Dr. Grainger is especially interested in the virus diseases of plants. He has spent about two months at the University of Wisconsin in familiarizing himself with the technique used in the study of this group of plant diseases. He also has visited other institutions interested in these and similar lines of research, especially Purdue University Agricultural Experiment Station, Cornell University, and the Boyce Thompson Institute for Plant Research, Inc. He is expecting to sail for England on March 3.

OFFICE SEMINAR NOTES

On March 8, at the fifth and last seminar in the series held by the Office of Cereal Crops and Diseases in the winter 1927-28, Mr. H. H. McKinney, pathologist in charge of cereal-virus-disease investigations, gave an illustrated account of his trip with the Allison V. Armour Expedition which went to the Canary Islands and West Africa in 1926-27.

Mr. McKinney had many slides showing the different plants which were affected by mosaic and mosaic-like diseases. His slides of interesting old threshing floors in southern Spain, which were built during the Roman occupation, of native dwellings, markets, and customs also were of much interest to the audience.

MANUSCRIPTS AND PUBLICATIONS

10 A manuscript entitled "Some Plant Characters Determining Yields in Fields of Winter and Spring Wheat in 1926," by Karl S. Quisenberry, was approved on March 2 for publication in the Journal of the American Society of Agronomy.

11 A manuscript entitled "The Daily Growth and Oil Content of the Flax Seed," by A. C. Dillman, was submitted on March 14 for publication in the Journal of Agricultural Research.

Page proof of Misc. Pub. 21 entitled "Formaldehyde Seed Treatment for Oat Smuts," by V. F. Tapke, was read March 10.

Page proof of Misc. Circ. 108 (Revised) entitled "Copper-Carbonate Seed Treatment for Stinking Smut of Wheat," by V. F. Tapke and F. C. Meier, was read March 12.

Proof was read on March 15 of the nine articles submitted in October, 1927, for publication in the Yearbook of the Department for 1927.

Tech. Bul. 39 entitled "Inheritance of Awnedness, Yield, and Quality in Crosses between Bobs, Hard Federation, and Propo Wheats at Davis, California," by J. Allen Clark, Victor H. Florell, and John R. Hooker, was received from the Government Printing Office on March 2, bearing date of February, 1928. (40 pp., 6 figs.)

Tech. Bul. 51 entitled "Broomcorn Experiments at the United States Dry-Land Field Station, Woodward, Okla.," by John B. Sieglinger, was received from the Government Printing Office on March 10, bearing date of February, 1928. (32 pp., 8 figs.) (Manuscript submitted May 10, 1927.)

The article entitled "Natural and Artificial Hybrids of a Chinese Wheat and Rye," by C. E. Leighty and W. J. Sando, appears in the Journal of Heredity 19 (1): 23-27, fig. 11. January, 1928. (Received March 15) (Manuscript approved March 29, 1927.)

The article entitled "Penicillium Injury to Corn Seedlings," by Helen Johann, appears in Phytopathology 18 (2): 239-242. February, 1928. (Received March 16) (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station. (Manuscript approved Sept. 17, 1927.)

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST STATES (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love) (February 22)

The winter at Ithaca has been rather open. There has been little snow. Wheat is being injured in some sections. On the University Farm some of the wheat in our rod-row nurseries has been injured and, while we do not know the extent of the injury, it will depend somewhat upon the weather from now on until the first of April. It is evident, however, that so far as our selection and testing work is concerned, we shall have the severe conditions which are really an aid to our investigations.

Considerable note-taking and assembling of notes on our hybrid material has been done this winter and much of this is being put into form for publication.

In the greenhouse we are growing a lot of F_1 hybrids, together with some varieties which are to be used for further crosses.

Farm and Home Week was held the week of February 13. About 5,000 persons registered. Great interest was shown in the plant improvement work, especially the small-grain work. Many farmers asked for sources of seed of the small grains as well as of other crops. We can see an ever growing interest in this work, and we do not need to fear about the spread of new strains when we have something that is really superior, as the farmers are convinced now that many of the varieties that have already been sent out are doing so well that they are willing to take others when we are ready to say that they are the right sort or an improvement over the old strains.

HUMID MISSISSIPPI VALLEY STATES (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. R. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, ----------)

Iowa State College, Ames (Barberry Eradication, P. W. Rohrbaugh)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

Box 72, Post Office Building, Urbana (Barberry Eradication, ----------)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, H. S. Jackson and E. B. Mains)

Purdue University College of Agriculture, La Fayette (Barberry Eradication, W. E. Leer)

OHIO

Ohio State University, College of Agriculture, Columbus (Barberry Eradication, J. W. Baringer)

MICHIGAN

Agricultural College, East Lansing (Barberry Eradication, W. F. Reddy)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

Department of Agriculture, State Capitol Annex, Madison (Barberry Eradication, W. A. Walker)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, O. S. Aamodt)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

Agricultural Experiment Station, University Farm, St. Paul (Barberry Eradication, L. W. Melander)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

COLORADO

Agricultural College, Ft. Collins (Barberry Eradication, E. A. Lungren)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, ----------)

College of Agriculture, University Farm, Lincoln (Barberry Eradication, A. F. Thiel)

WYOMING

College of Agriculture, University of Wyoming, Laramie (Barberry Eradication, E. A. Lungren)

SOUTH DAKOTA

College of Agriculture, Brookings (Barberry Eradication, R. O. Bulger)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Agricultural Experiment Station, State College Station, Fargo (Barberry Eradication, G. C. Mayoue)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (February 16)

Since the first week in January the weather has been comparatively mild. There has been an abundance of sunshine and but little windy weather. The maximum temperature for January was 39 degrees on the 5th and the minimum was 35 degrees below zero on the 1st. The minimum for February to this date was 4 degrees below zero on the 1st and 2nd, and the maximum was 47 degrees on the 12th. The mean temperature for January was 12.7 degrees, which is a little above normal.

The warm weather has melted the show considerably so that plowed fields are bare in some places and the snow has settled in the stubble fields. The winter grain in both plats and nursery still remains protected by snow, as it has been since the middle of November.

Country roads are now passable but very rough. Some wheat is being marketed in spite of the condition of the roads.

(March 1)

The weather in February has been comparatively mild, with a mean temperature of 17.4 degrees, which is 5.6 degrees above normal for the month. The maximum temperature was 47 degrees on the 12th, while the minimum was 11 degrees below zero on the 23rd. The precipitation was below normal, being only 0.29 inch. Comparatively still weather has prevailed during most of the winter, but, during the past week or more there has been some wind moving nearly every day.

Plowed fields, which are rather scarce, are partly bare of snow, while stubble fields and prairie grass are for the most part covered with a few inches of snow. In places the snow has been changed by thawing and freezing into ice.

In February a series of seven economic conferences was held in representative districts of North Dakota in which officials from the Extension Staff of the State Experiment Station met with committees of leading farmers to work out programs for the agricultural development of the respective districts. The meeting for this part of the State was held at New England, Hettinger Co., on February 16 and 17 and was attended by Supt. Leroy Moomaw.

Among the various recommendations made at the New England meeting concerning the increase in diversified farming and the growing of more feed crops, it was recommended that more corn, barley, and emmer be grown, the latter to take the place of oats to some extent where wild oats are a serious problem. In this connection the following table showing the relative yield and feeding value of some of the leading varieties of the different cereals grown at the Dickinson Substation for the past 20 years may be of interest.

Comparative yield and feeding value of leading varieties of different cereals grown on the Dickinson Substation during the past 20 years.

Crop and Variety	Acre Yield (20-yr. Av.)		Digestible nutrients	Digestible nutrients per acre
	(Bu.)	(Lbs.)	Per cent	Pounds
Victory oats	48.83	1,595	70.4	1,123
Hannchen barley	29.69	1,425	79.4	1,131
Yaroslav emmer	44.62	1,428	76.5	1,092
Durum wheat[1]	21.66	1,300	78.8	1,024
Dakold winter rye[2]	17.62	987	81.0	799
Dak. White Flint corn[3]	25.09	1,405	84.2	1,183
Northwestern Dent[3]	23.1	1,294	84.2	1.090

[1] Monad durum for the past 15 years, and Kubanka, C.I.1440, for the first 5 yrs.
[2] Average for the past 15 years.
[3] Average for the past 9 years.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus)

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles)

State College of Agriculture, Bozeman (Barberry Eradication, W. L. Popham)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens) [March 1]

The winter in eastern Oregon has been a long one and quite cold, although no very low temperatures were recorded. The coldest weather at Moro occurred during the last few days of December and the first week in January. The lowest temperature during the winter was 1 degree above on Dec. 31. The mean temperature for January was 28.9 degrees, 1.6 degrees less than the normal for that month.

Some damage was done in late December to fall-sown spring grains. There were sown in the Columbia River Basin of Oregon last fall about 110,000 acres of Federation wheat. About one-third, and perhaps more, of this acreage will have to be reseeded. On the Station there was about 20 per cent of winterkilling in the plats of Federation in the varietal trial and a considerably higher percentage in the nursery. Several winter barley varieties also are about 80 per cent winterkilled. Federation wheat sown with the furrow drill is damaged but slightly.

The total precipitation for January was 2.49 inches, most of it in the form of snow. Nearly all of this precipitation was lost as run-off, the ground being frozen 8 to 10 inches deep when the thawing weather occurred.

The total precipitation for February was 0.28 inch. The highest temperature during the month was 56 degrees on the 18th and the lowest 18 degrees on the 25th.

Although there has been no snow on the ground for the past three weeks and very little precipitation, the ground is drying very slowly because of the comparatively cool weather--thawing a little during the day and freezing at night, and there is no wind.

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (Feb. 14)

The total precipitation from October 1, 1927, to January 31, 1928, was 9.75 inches, whereas the normal for this period is 12.27 inches. The weather at present is warming up.

The station buildings are being painted and their appearance is very much improved.

The Rice Growers Association reports a total production last year of 4,129,166 bags of rice from 166,500 acres in California. This is an average yield per acre of 2,479 pounds. Approximately 55 per cent of the acreage last year was sown to the Caloro variety, and 31 per cent to Colusa (1600).

The California rice market is quiet and prices are the lowest that they have been in the past 10 years. There is considerable damp and some damaged rice in the warehouses. It looks as if part of the crop in the warehouses will have to be exported if it is cleaned up before the new crop comes on this fall. On the Rice Exchange last week the prices paid for rough rice ranged from $1.35 to $2.25 per hundred.

The low prices being paid for rough rice and the difficulty experienced in harvesting the crop last fall will no doubt have a tendency to reduce the acreage sown to rice in California this year.

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs) (March 9)

I was in Davis yesterday and found the nurseries in excellent condition. As a matter of fact, I don't believe I ever saw them looking better at this time of the year. The rainfall at Davis has been considerably below normal, but there is plenty of moisture to keep the material coming along for some time. Of course, we are hoping for more rain before the dry season sets in. At any rate, I shall be able to irrigate most of my nursery so that I do not have to worry much about rain.

I found everything in Berkeley much as I had expected. The barleys in the greenhouse did not develop so well as they might have, but I am getting some interesting results in spite of that. I have harvested about one-fourth of the greenhouse material. Up to the present I have found only one head of smut in the Sacramento barley. This is the first time that I have ever had any smut on this variety. I found several heads of smut on the California Mariout. This variety also has been completely resistant to smut in my tests heretofore. However, there is one selection of California Mariout that has shown smut in previous experiments, and I am wondering if I might not have had a mixed sample of these two selections. This is a point that can be checked next year.

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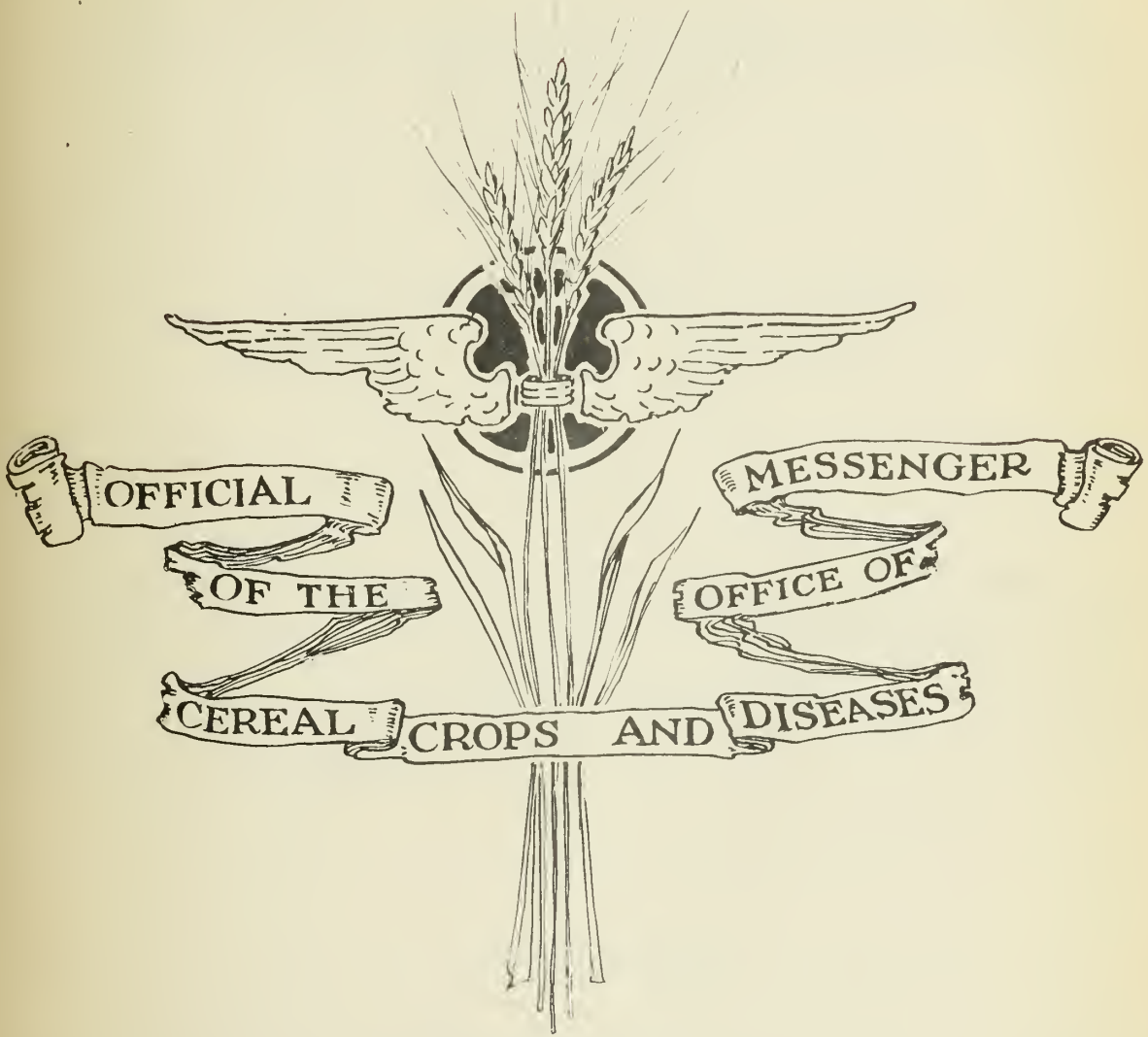
CEREAL COURIER



BUREAU
OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 6

March 31, 1928
Personnel (March 16-31) and Project Issue

NOTICE

Beginning with the issue of April 10, 1928, the Cereal Courier will appear three times a month, namely, on the 10th, 20th, and last days of the month. The courtesy will be greatly appreciated if all contributors at agronomic, pathologic, and barberry-eradication headquarters will mail field reports promptly on the 15th and last days of the month. The issues of the 10th and 20th day of the month carry the field reports; the issue of the last day of the month is the project issue.

PERSONNEL ITEMS

Dr. C. R. Ball, senior agronomist in charge, returned to Washington on March 31 after an absence of two weeks in Nebraska, North Dakota, and Minnesota. From March 19 to 24, inclusive, Dr. Ball was in attendance at the Tenth Annual Meeting of the State Leaders in Barberry Eradication and Stem-rust Epidemiology and Members of Cooperating Agencies at Lincoln, Nebr. On Tuesday, March 20, he gave an address before the meeting on "The Job Ahead in Barberry Eradication," and on Saturday, March 24, he spoke on "Future Opportunities for Men in Barberry Eradication."

On Wednesday, March 21, Dr. Ball addressed the faculty and student body of Nebraska Wesleyan University at their chapel services on "The Purposes, Problems, and Progress of Barberry Eradication." This talk was broadcasted over Station WCAJ. On the afternoon of the 21st, Dr. Ball spoke before the seminar of the Department of Botany of the University of Nebraska on "Selling Botany to the Public." On March 23, he spoke to a large class of freshmen in agronomy on "Some Problems of Agriculture and Personality." At noon of that day, he spoke at the luncheon of the Kiwanis Club, of Lincoln, on "The Present and Future of Agriculture in America."

Dr. Ball spoke on March 24 over Station KFAB, the big commercial station at Lincoln, on "Lessons from the Barberry Conference."

On Monday, March 26, he spoke at the monthly luncheon of the staff of the Minnesota Agricultural Experiment Station on "The History and Development of the Combined Harvester-Thresher," and on Tuesday, March 27, he addressed The First Annual Spring Wheat Breeding Conference at Fargo, N. Dak., on "Seeing All Sides of a Complex Problem." On Wednesday, March 28, he spoke at the Honor's Day Convocation of the student body of North Dakota Agricultural College on "Education and Society." At 7:30 o'clock that night he broadcasted over Station WDAY a talk entitled "Progress and Results of Barberry Eradication."

On Wednesday, March 28, and Thursday, March 29, Dr. Ball had conferences with the agronomists, agricultural engineers, and agricultural economists of the North Dakota and Minnesota Agricultural Experiment Stations, respectively, on proposed cooperation in studies of the combined harvester-thresher in 1928.

Robert W. Bills was appointed on March 16 as State Leader of barberry eradication in Illinois to fill the vacancy created by the resignation of Gordon C. Curran on September 30, 1927. Mr. Bills, whose headquarters are at Urbana, was authorized to attend the Tenth Annual Meeting of the Leaders in Barberry Eradication and Stem-Rust Epidemiology and Members of Cooperating Agencies at Lincoln, Nebr., from March 19 to 24.

Charles E. Chambliss, associate agronomist in charge of rice investigations, left Washington on March 21 for St. Louis and Elsberry, Mo. In company with Dr. W. C. Etheridge, professor and chairman of Department of Field Crops, College of Agriculture and Agricultural Experiment Station of the University of Missouri, Mr. Chambliss inspected several tracts of land in the vicinity of Elsberry for the purpose of selecting one suitable for cooperative rice investigations, the object being to introduce rice into the cropping system of these bottom lands. Mr. Chambliss returned to Washington on March 26.

R. R. Childs, agent in the cooperative cereal investigations at Athens, Ga., writes under date of March 9 that winter wheat and rye are beginning to show some signs of spring growth. They were only slightly damaged by the severe winter.

Most of the oats were killed but were reseeded in February and they are just coming up at the present time.

L. D. Hutton, associate pathologist in charge of barberry eradication, returned to Washington on March 26, after an absence of nearly three weeks in some of the barberry-eradication States.

L. D. Leach, agent in the cooperative investigations on crown rust of oats at Ames, Iowa, since January 1, 1926, resigned his position on March 24 to accept an appointment with the California Agricultural Experiment Station. Hickman C. Murphy was appointed on March 20 to succeed Mr. Leach.

A. F. Swanson, assistant agronomist in charge of the cereal investigations at the Hays Branch Experiment Station, Hays, Kans., in writing to Mr. Stanton on March 16, states that a heavy snow, equivalent to an inch of moisture, had just fallen. The regular spring seeding probably will be delayed about 10 days or two weeks. The soil is full of moisture and the prospects for wheat on the Station were never better. The condition of wheat is generally quite satisfactory in Kansas.

The following members of the Office were authorized to attend the First Annual Spring Wheat Breeding Conference to be held at Fargo, N. Dak., the week of March 26:

O. S. Aamodt, St. Paul, Minn.
J. Allen Clark, Washington, D. C.
E. R. Ausemus, Mandan, N. Dak.
M. A. McCall, Washington, D. C.
C. R. Ball, Washington, D. C.
R. W. Smith, Dickinson, N. Dak.
E. C. Stakman, St. Paul, Minn.

Dr. Ball addressed the Conference on "Seeing All Sides of a Complex Problem." The talk presented by Mr. Clark on March 27 was entitled "Wheat Improvement and What May Be Expected from Breeding for Yield, Quality, and Disease Resistance."

VISITORS

R. A. Acevedo, who has been a student at the University of California, the Kansas Agricultural College, and the University of Minnesota since 1921, was an Office visitor on March 21. Mr. Acevedo is returning to his home in the Philippine Islands.

Dr. G. I. Christie, Director of the Purdue University Agricultural Experiment Station, called at the Office on March 29 to see Dr. Ball, who was absent in the West.

TENTH ANNUAL MEETING OF STATE LEADERS OF BARBERRY ERADICATION AND STEM-RUST EPIDEMIOLOGY AND MEMBERS OF COOPERATING AGENCIES
Lincoln, Nebraska, March 19-24, 1928

Barberry eradication is reducing stem-rust losses and must be carried on to a successful conclusion. This was the keynote of the Tenth Annual Meeting of State Leaders in Barberry Eradication and Stem-Rust Epidemiology and Members of Cooperating Agencies, which was held at the College of Agriculture, Lincoln, Nebr., from March 19 to 24, inclusive. This sentiment was based on ten years of barberry eradication progress in which over 16,000,000 barberry bushes have been located and destroyed in the 13 north-central States comprising the eradication area.

This conference was of particular interest and importance in that the barberry-eradication campaign has just concluded its first decade of progress. As a pioneer of plant-pest eradication on such a tremendous scale the barberry campaign has been forced to cope with and overcome many problems which could not be anticipated at its inception. In the past ten years many of these problems have been solved, so that the campaign now stands on a doubly firm foundation of demonstrated merit and proved practices.

The conference unquestionably was the most successful one in the history of the campaign. The increased experience of the past years, combined with a fuller realization of the problems of the campaign, made possible a clearer analysis of the present situation and a more comprehensive projection of future methods of progress. Excellent papers were presented on personnel organization and training, barberry surveys and eradication methods, research problems in connection with the campaign, stem-rust, leaf-rust, and crown-rust studies, publicity and educational activities, and other related subjects. Full discussions of each of these important phases of the campaign followed each paper.

The very fine cooperation of the members of the staff of the Agricultural College of the University of Nebraska was a very material factor in making the conference more pleasant and profitable. Several rooms of the Plant Industry Building were turned over to the conference and everything possible was done to aid in making the meeting a success.

Following is a list of the delegates present at the meetings:

Cereal Crops and Diseases, Administration

Dr. C. R. Ball
G. C. Curran
Dr. H. B. Humphrey
L. D. Hutton

Stem-rust, Leaf-rust, and Crown-Rust Investigations

Dr. E. C. Stakman
Dr. M. N. Levine
R. U. Cotter
Dr. E. B. Mains
Dr. S. M. Dietz

State Leaders in Barberry Eradication

J. W. Baringer, Ohio
R. W. Bills, Illinois
R. O. Bulger, South Dakota
W. E. Leer, Indiana
E. A. Lungren, Colorado
G. C. Mayoue, North Dakota
L. W. Melander, Minnesota
W. L. Popham, Montana
W. F. Reddy, Michigan
P. W. Rohrbaugh, Iowa
A. F. Thiel, Nebraska

Conference for the Prevention of Grain Rust

F. M. Crosby
D. G. Fletcher
G. D. George
John L. Richardson

Others in attendance were:

E. L. Chambers, State Entomologist of Wisconsin
Dean W. W. Burr, Director of Nebraska Agricultural Experiment Station
Prof. W. H. Brokaw, Director of Nebraska Agricultural Extension Service
Dr. R. J. Pool, Chairman, Department of Botany, University of Nebraska
Dr. G. L. Peltier, Chairman, Department of Plant Pathology, Univ. Nebr.
Dr. R. W. Goss, Associate Professor of Botany, University of Nebraska
Prof. J. E. Weaver, Ecologist, University of Nebraska
Dr. T. A. Kisselbach, Professor of Agronomy, University of Nebraska
Dr. F. D. Keim, Professor of Agronomy, University of Nebraska
Elton Lux, Editorial Assistant, University of Nebraska
H. H. Biggar, Farm Editor, Omaha Daily Journal Stockman
C. V. Kightlinger, Middleport, N. Y.

MANUSCRIPTS AND PUBLICATIONS

12 A manuscript entitled "Varieties of Hard Red Winter Wheat," by J. Allen Clark and Karl S. Quisenberry, was submitted on March 19 for publication as a Farmers' Bulletin to supersede Farmers' Bulletin 1280.

13 A manuscript entitled "Method of Harvesting Grain Sorghums," by J. H. Martin, Office of Cereal Crops and Diseases, L. A. Reynoldson and B. E. Rothgeb, Bureau of Agricultural Economics, and W. M. Hurst, Bureau of Public Roads, was submitted on March 24 for publication as a Technical Bulletin.

14 A manuscript entitled "Harvesting Grain Sorghums," by J. H. Martin, Office of Cereal Crops and Diseases, L. A. Reynoldson and B. E. Rothgeb, Bureau of Agricultural Economics, and W. M. Hurst, Bureau of Public Roads, was submitted on March 24 for publication in the Farmers' Bulletin series.

15 A manuscript entitled "The Relation of Temperature to the Development of Disease in Plants," by James G. Dickson and James R. Holbert, was approved on March 31 for publication in The American Naturalist.

The article entitled "Further Studies on the Soil Relationships of the Mosaic Disease of Winter Wheat," by Robert W. Webb, appears in the Journal of Agricultural Research 36 (1): 53-75, figs. 1-4. Jan. 1, 1928. (Rec. March 20) (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station. (Mss. received by the Journal Sept. 23, 1927)

The article entitled "Smut Susceptibility of Naturally Resistant Corn When Artificially Inoculated," by Marion A. Griffiths, appears in the Journal of Agricultural Research 36 (1): 77-89, figs, 1-4. Jan. 1, 1928. (Rec. March 20) (Mss. received by the Journal Oct. 21, 1927)

Tech. Bul. 70 entitled "The Combined Harvester-Thresher in the Great Plains," by L. A. Reynoldson and R. S. Kifer, Bureau of Agricultural Economics, J. H. Martin, Office of Cereal Crops and Diseases, Bureau of Plant Industry, and W. R. Humphries, Bureau of Public Roads, was received from the Government Printing Office on March 23, bearing date of February, 1928. (60 pp., 18 figs.) (In cooperation with the agricultural experiment stations of Texas, Oklahoma, Kansas, Nebraska, and Montana.)

A brief article entitled "Relative Resistance of Oat Varieties to Shattering at Moro, Oregon," by T. R. Stanton, D. E. Stephens, and B. B. Bayles, appears under the section of Notes in the Journal of the American Society of Agronomy 20 (3): 304-305. March, 1928. (Mss. submitted Jan. 4, 1928)

Kans. Agr. Expt. Sta. Tech. Bul. 22 entitled "The Control of Sorghum Kernel Smut and the Effect of Seed Treatments on Vitality of Sorghum Seed," by C. O. Johnston and L. E. Melchers, was received on March 31, bearing date of February, 1928. (37 pp.) (Cooperation between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.) (Mss. submitted June 4, 1926)

B.P.I. Memo. 335.

February 24, 1928

MEMORANDUM FOR HEADS OF OFFICES

Gentlemen:

The Comptroller General has written to the Secretary of Agriculture, calling his attention to the fact that the old Form 4 vouchers for reimbursement expenses is still occasionally being used. General Regulations No. 36, General Accounting Office, June 26, 1924, prescribed Standard Forms No. 1012, 1012-a, 1012-b and 1012-c, known as "Public voucher for reimbursement of travel and other expenses, including per diem," for general use throughout the Government Service in lieu of those used for like purposes which had therefore been approved.

It is therefore requested that you notify each of your employees to destroy all Form 4 vouchers now on hand and render accounts on Standard Forms 1012, 1012-a, 1012-b, and 1012-c, in accordance with General Regulations No. 36 cited above.

Very truly yours,

WM. A. TAYLOR

Chief of Bureau.

B.P.I. Memo. 340

March 12, 1928

MEMORANDUM FOR HEADS OF OFFICES

Gentlemen:

In a recent circular issued by the Director of Information, attention is called to the requirements of the revised administrative regulations that carbon copies of all articles or written addresses bearing upon the work of the Department should be forwarded with the article for which outside publication or delivery is desired. When an article or address is published and that fact is recorded in the Official Record, the carbon copy will be returned to the originating bureau.

The Director of Information has made the following comments with reference to this procedure:

> "The reason for this procedure is that both the Press Service and the Division of Publications of this office are interested in seeing copies of articles which are published outside the Department. In that way the Press Service is aided in its publicity work and the Division of Publications receives information of benefit in handling other publications of the Department.
>
> "The approval of the originating Bureau will be obtained before any articles written in the Press Service are released to the press. Many articles prepared for outside publication contain material which should get to the general public about the same time that the article is published. We shall be careful, however, to preserve the confidential character of the material until it is published."

It will facilitate the prompt handling of articles for which outside publication is requested if the original and carbon copy are forwarded simultaneously to the Office of the Chief of Bureau. Wherever it is desired that press release regarding the subject matter of an article be delayed until after the appearance of the article, it would probably be advisable to add a statement to that effect in the note requesting authority for outside publication.

Very truly yours,

WM. A. TAYLOR

Chief of Bureau.

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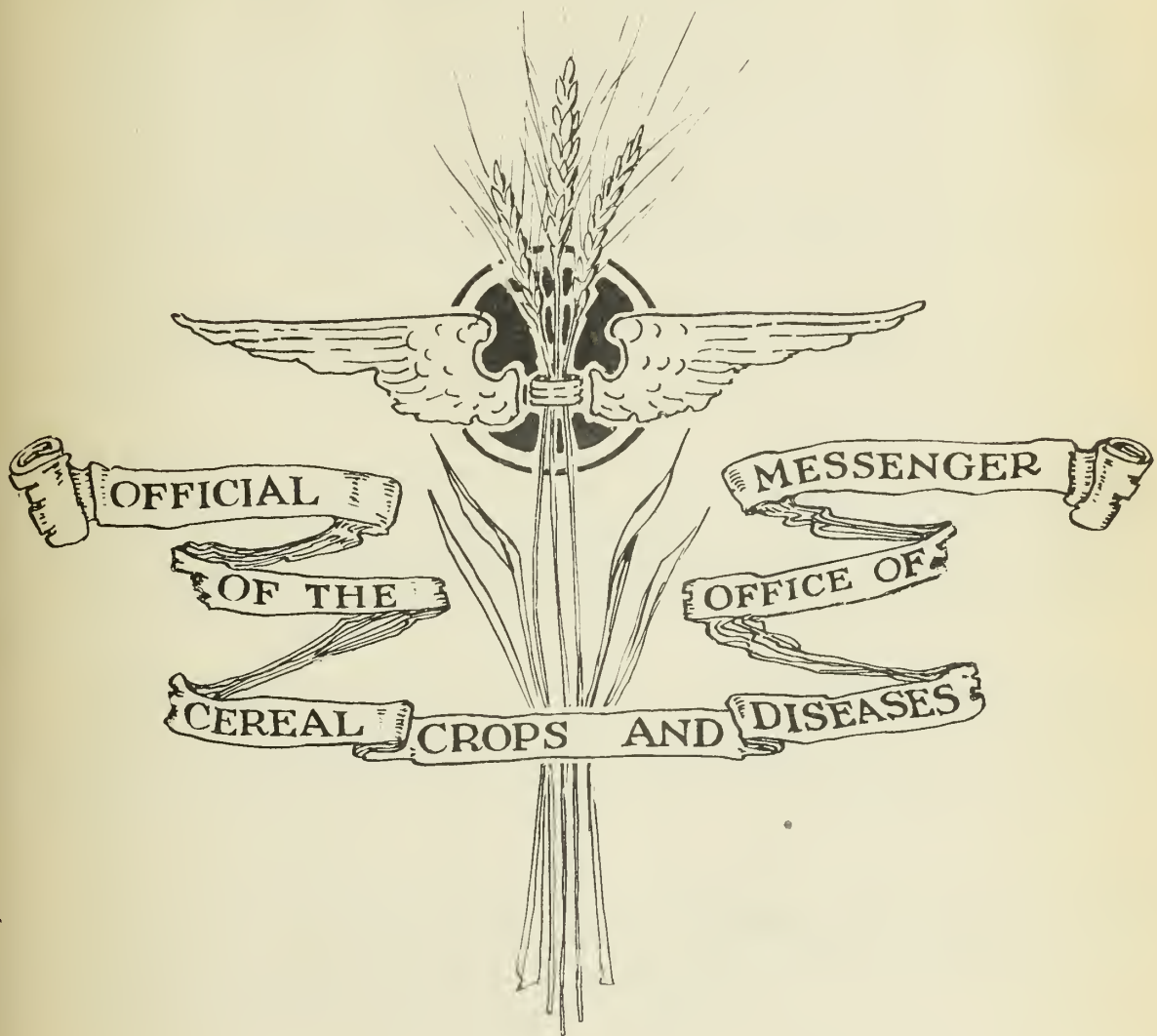
CEREAL COURIER



BUREAU
OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 7

April 10, 1928
Personnel (April 1-10) and Field Station (March 1-31) Issue

PERSONNEL ITEMS

The appointment of Dr. J. C. Arthur, emeritus professor of botany, Purdue University, La Fayette, Ind., who since November 1, 1922, has cooperated with this Office in the preparation of manuscripts on cereal rusts, was terminated on March 31, 1928, the work for which Dr. Arthur was appointed having been completed.

J. Allen Clark, agronomist in charge of western wheat investigations, returned to Washington on April 2. He attended the First Annual Spring Wheat Breeding Conference at Fargo, N. Dak., on March 27, where he gave an address on "Wheat Improvement and What May Be Expected from Breeding for Yield, Quality, and Disease Resistance."

After leaving Fargo, Mr. Clark went to St. Paul, Minn., where he conferred with Station officials at University Farm regarding cooperative wheat investigations. On March 30, at the request of Dr. H. K. Hayes, he spoke before the Plant Breeding Seminar of the University of Minnesota, on "The Organization and Work of the Western Wheat Investigations Project."

Gordon C. Curran, associate pathologist in barberry eradication, returned to Washington on April 1 after an absence of two weeks in Illinois, Indiana, and Nebraska. He spent a few days at Urbana, Ill., in helping Mr. R. W. Bills, the new State Leader of barberry eradication, in making plans for the campaign in Illinois this season. Mr. Curran also attended the Tenth Annual Meeting of the State Leaders in Barberry Eradication and Stem-Rust Epidemiology and Members of Cooperating Agencies held at Lincoln, Nebr., the week of March 19.

M. A. McCall, agronomist in charge of cereal agronomy investigations, returned to Washington on April 2. He attended the First Annual Spring Wheat Breeding Conference at Fargo, N. Dak., on March 27.

While at Fargo, Mr. McCall conferred with officials on cereal disease experiments. He also visited St. Paul and Minneapolis, Minn., Madison, Wis., and Bloomington, Ill., in the interests of cooperative cereal investigations.

Richard S. Talbott, junior scientific aid, who has served this Office in connection with cereal-disease investigations since March 1, 1924, resigned his position on April 4, 1928, to enter commercial work.

VISITORS

Prof. L. R. Jones, professor of plant pathology in the University of Wisconsin, was an Office visitor on April 2.

Miss Fride Kutsner, a German plant breeder, now a student at Cornell University, was an Office visitor on April 7.

Hon. Clarence F. Lea, Representative in Congress from the First District of California, called at the Office on April 7 in the interests of rice investigations in California. He was accompanied by the son of Representative Charles F. Curry, of California.

MANUSCRIPTS AND PUBLICATIONS

16 A manuscript entitled "Spring-Sown Red Oats," by T. R. Stanton and F. A. Coffman, was submitted on April 5 for publication in the Farmers' Bulletin series.

17 A manuscript entitled "Relation of Husk Covering to Ear Smut of Corn," by C. H. Kyle, was submitted on April 5 for publication in the Journal of Agricultural Research.

18 A brief note on "Polyembryony in Rice," by Jenkin W. Jones, was approved on April 10 for publication in the Journal of the American Society of Agronomy.

Galley proof of article entitled "A Cytological Study of Puccinia glumarum on Bromus marginatus and Triticum vulgare," by Ruth F. Allen, for publication in the Journal of Agricultural Research, was read on April 4.

The 24-page pamphlet entitled "Iowa Corn Yield Test," by Joe L. Robinson and A. A. Bryan, published by the Iowa Corn and Small Grain Growers' Association, has been received. (The Iowa State Corn Yield test is conducted by the Iowa Corn and Small Grain Growers' Association in cooperation with the Farm Crops Section, Iowa Agricultural Experiment Station and the Office of Cereal Crops and Diseases, Bureau of Plant Industry, U. S. Dept. Agriculture.)

Miscellaneous Circular 108 (Revised) entitled "Copper-Carbonate Seed Treatment for Stinking Smut of Wheat," by V. F. Tapke and F. C. Meier, was received from the Government Printing Office on April 3, bearing date of February, 1928. (4 p., illus.) (Cooperation between the Office of Cereal Crops and Diseases, Bureau of Plant Industry, and the Office of Cooperative Extension Work.)

Miscellaneous Publication 21 entitled "Formaldehyde Seed Treatment for Oat Smuts," by V. F. Tapke, was received from the Government Printing Office on April 4, 1928. (4 p., illus.)

The article entitled "Differential Staining of Specialized Cells in Begonia with Indicators," by Dean H. Rose and Annie M. Hurd-Karrer, appears in Plant Physiology 2 (4): 441-453, figs. 1-3. October, 1927. (Received April 5, 1928) (Cooperation between Office of Fruit Diseases and Office of Cereal Crops and Diseases, B. P. I.) (Mss. approved for publication, Sept. 30, 1927)

FIRST ANNUAL SPRING WHEAT BREEDING CONFERENCE

The First Annual Spring Wheat Breeding Conference, called by President John Lee Coulter of the North Dakota Agricultural College, was held at that institution on March 27. Representatives of the agricultural experiment stations of Minnesota, North Dakota, South Dakota, and Montana had been invited, together with representatives of the agricultural press, the railroads, elevator companies, millers, bakers, and seedsmen. Those in attendance numbered more than 75 of whom more than 50 were from outside of the North Dakota Agricultural College. The program of set papers is as follows:

J. L. Coulter, Presiding Officer, Address of Welcome.

C. R. Ball: Seeing All Sides of a Complex Question.

H. K. Hayes: The Rôle of Plant Breeding in Crop Improvement.

J. A. Clark: Wheat Improvement, and What May Be Expected from Breeding for Disease-Resistance, Yield, and Quality.

E. C. Stakman), Olaf S. Aamodt): The Interdependence of the Geneticist and Pathologist in Wheat Breeding, and Their Way of Working Together.

C. E. Mangels: Relation of the Cereal Chemist to Wheat Breeding.

L. R. Waldron: A First Approach in Securing Commercial Rust-Resistant Wheats.

E. S. McFadden: Possibilities and Difficulties in the Field of Radical Wheat Crossing.

E. G. Booth: Demonstration, Distribution, and Conservation of New Wheat Varieties. (To be considered in committee.)

H. L. Bolley: Maintaining Purity of the Varieties. (To be considered in committee.)

M. A. Gray), T. C. Roberts): New Wheat Varieties from the Point of View of the Commercial Miller.

COMMITTEE: Improved Wheat: The Program.

COMMITTEE: The Program: Organization and Cooperation.

COMMITTEE: The Program: How to Finance It.

C. H. Goulden: The Canadian Wheat Improvement Program in Action.

The meeting was characterized by a unity and harmony of purpose that was encouraging and by a determination to work out a program for future wheat improvement which was most gratifying. After the presentation of the papers on the program was completed the conference was formed into three committees appointed by President Coulter and covering program, organization and cooperation, and finance, respectively. The program committee reported a program of wheat breeding research covering the four spring-wheat States and recommended that it be further amplified and organized by a permanent committee. The finance committee recommended the presentation of the program and the budget estimates to the various agencies participating in the conference and later to the Federal Congress and the legislatures of the four States concerned.

At the dinner which followed, the organization was made permanent with the election of the following officers:

President, Dr. John Lee Coulter, President of the N. Dak. Agricultural College

Vice-President, Vice Director Andrew Boss, Minnesota Agr. Expt. Station

Secretary-Treasurer, Dr. L. R. Waldron, North Dakota Agr. Expt. Station

These three officers, with the chairmen of the continuing program and finance committees, comprise the executive committee.

Members of the program committee were elected as follows:

South Dakota:	Dean C. Larsen, S. Dak. State College. Dr. A. N. Hume, Agronomist, S. Dak. Station. Dr. J. T. E. Dinwoodie, Editor, Dakota Farmer.
North Dakota:	Dr. L. R. Waldron, Plant Breeder, N. Dak. Station. Dean H. L. Walster, N. Dak. Agr. College. Roy Johnson, Farmer.
Montana:	Prof. Clyde McKee, Agronomist, Mont. Station. Prof. L. D. Kurtz, Farm Crops, Mont. Station. J. A. Wilson
Minnesota:	Dr. H. K. Hayes, Plant Breeder, Minn. Station. Dr. E. C. Stakman, Plant Pathologist, Minn. Station. T. C. Roberts, Washburn-Crosby Co.
U. S. Dept. Agr:	Dr. Olaf S. Aamodt, Assoc. Pathologist (Coop. invest.) St. Paul, Minn. M. A. McCall, Cereal Agronomy, Washington, D. C. J. Allen Clark, Western Wheat Investigations, Washington, D. C.
Manitoba:	W. T. G. Wiener, Winnipeg, Agronomist, Manitoba Agr. College.

Saskatchewan: Dr. J. B. Harrington, Plant Breeder, Univ. Sask., Saskatoon.

Alberta: Dr. Robert Newton, Agronomist, Univ. Alberta, Edmonton.

Dominion of Canada: Dr. C. H. Goulden, Dominion Rust Lab., Winnipeg.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST STATES (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (April 7)

The rather favorable weather of March and the first week of April was of material benefit to the fall-sown grains. Some of the oats and barleys believed to have been winter-killed a month ago, have shown marked recovery. On the whole, however, the winterkilling and injury was unusually severe. All varieties of oats and barley showed some winterkilling and all soft red wheats, with the exception of Harvest Queen, showed some leaf killing. The hard red winter wheats manifested no direct winter injury, but the destruction from heaving is unusually severe.

The small-grain nurseries were more severely injured by winterkilling than the plats. Barley is a possible exception. Natural selection was severe in the strains of typical Fulghum oats.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY STATES (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, ----------)

Iowa State College, Ames (Barberry Eradication, P. W. Rohrbaugh)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

Box 72, Post Office Building, Urbana (Barberry Eradication, R. W. Bills)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, H. S. Jackson and E. B. Mains)

Purdue University College of Agriculture, La Fayette (Barberry Eradication, W. E. Leer)

OHIO

Ohio State University, College of Agriculture, Columbus (Barberry Eradication, J. W. Baringer)

MICHIGAN

Agricultural College, East Lansing (Barberry Eradication, W. F. Reddy)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

Department of Agriculture, State Capitol Annex, Madison (Barberry Eradication, W. A. Walker)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, O. S. Aamodt)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

Agricultural Experiment Station, University Farm, St. Paul (Barberry Eradication, L. W. Melander)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieg-

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

COLORADO

Agricultural College, Ft. Collins (Barberry Eradication, E. A. Lungren)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, ----------)

College of Agriculture, University Farm, Lincoln (Barberry Eradication, A. F. Thiel)

WYOMING

College of Agriculture, University of Wyoming, Laramie (Barberry Eradication, E. A. Lungren)

SOUTH DAKOTA

College of Agriculture, Brookings (Barberry Eradication, R. C. Bulger)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Agricultural Experiment Station, State College Station, Fargo (Barberry Eradication, G. C. Mayoue)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (March 31)

Although the snowfall in February and March was considerably below normal and the weather in March unusually warm, the snow on the level prairie did not disappear until about the second week in March and that in stubble fields not until after the middle of the month. The winter-wheat nursery was protected by snow until the first week in March, and the plats of winter wheat and rye were covered until about the middle of March. Both plats and nursery had been covered with snow since about November 20. The unusually heavy snow in December insured protection throughout the coldest part of the winter so that at present there is apparently but little winterkilling in either plats or nursery. Due to dry weather in the fall, the stand in the nursery was thin while that in the plats was injured somewhat by grasshoppers in the fall.

The coldest weather in March occurred during the first week with a minimum of one degree above zero on the 4th and 5th. The warmest weather occurred during the week from March 18 to 24, with a maximum of 76 degrees on the 22nd. During that week some field work was done and some seeding reported in this county. The ground has been frozen during part of the present week and but little progress was made in field work.

If the present warm weather continues, seeding will become general next week in this county. Seeding at the Substation is expected to begin next week.

There has been a good demand for seed of Ceres wheat this spring and a considerable quantity has been distributed from the Substation.

Seed of the different cereal varieties is being prepared for sowing.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (April 2)

The weather at Mandan since the first week in January has been comparatively mild. The maximum temperature during this period was 74 degrees on March 22, and the minimum was -35 degrees on January 1. The precipitation for the three months, January, February, and March, was below normal with 0.20, 0.07, and 0.23 inch, respectively. The normal precipitation for January is 0.25 inch, February 0.29 inch, and March 0.74 inch.

The ice in the Missouri River has broken up and gone out without any flooding. There was an ice jam in the Heart River, southeast of Mandan, which caused some of the lower land to be flooded but it did little damage.

Work at the station during the past month has consisted of the preparation of seed for spring sowing and the running of germination tests on the oat and barley varieties. The seed of Markton and Victory oats was very poor with only about 20 per cent germination. The germination of Meloy barley was 20 per cent and of Trebi barley 30 per cent.

Farmers are seeding quite generally in the area south of Mandan, especially on the lighter types of soil. The first date of seeding reported was about March 20.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles)

State College of Agriculture, Bozeman (Barberry Eradication, W. L. Popham)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (March 30)

The weather of the first three weeks in March was comparatively dry, and about the middle of the month a few of the rice growers began to plow. From March 21 to 28 we had 3.85 inches of rain which brought the total precipitation up to 4.70 inches for the month.

At various points in the Sierra Nevada Mountains, from March 21 to 28, the rainfall ranged from 6 to over 13 inches and as a result all rivers in the Sacramento and San Joaquin valleys reached the flood stages. The Feather, Yuba, American, and Bear rivers were very high Monday and Tuesday and the Sacramento River was within 2 inches of the highest recorded mark.

A good deal of low orchard and farm land along the Feather, Yuba, and American rivers was flooded, as well as the rice lands west of Biggs, Gridley, and around Arboga. The water was 10 inches deep on the main street of Biggs, and a few inches of water entered several homes in the north and west parts of town. Fortunately we did not get any high water at the Rice Station.

The flood waters have no doubt done considerable damage in certain areas; two persons were drowned in Yolo County. The weather is now clear and the water is rapidly receding; however, the rivers are still high.

In the rice area it will require from two to three weeks of drying weather to put the land in condition to work again, and that means that we may be rather late in getting the rice crop sown.

About 4,500 acres of rice had been sown in the Sutter Basin before the heavy rains. I have not heard whether this area was submerged or not. If it was submerged and the water is slow in draining off, it may be necessary to reseed.

The rice market is quiet and the prices range from $1.75 to $2.35 per hundred, according to the grade of the rice. Unless part of the stocks on hand are exported there is apt to be quite a large carry-over in California of last year's crop.

University Farm, Davis (Cereal Agronomy, V. H. Florell) (March 30)

From March 22 to 26 there was a fine rainfall of 2.71 inches, making a total of 13.71 for the season. The normal on March 26 was 14.8 inches, so that it is still 1.09 inches below normal. The distribution of storms during the season has been very satisfactory, however, so that cereals at this time are in as good condition as I have ever seen them. Plentiful rains came in November, which was the usual time for seeding, with dry weather in the first part of December, and later occasional light rains during the winter. There was considerable freezing weather in December and January, but fine sunny weather has prevailed in February and March.

The grains are now from 2 to 3 feet high with some varieties beginning to head. Selections of Coast barley began heading on March 19; Smyrna on March 26, and California Mariout on March 27. White Federation x Bunyip Wheat (Calif. No. 537) began heading on March 28. The indications are that the recent rain storm will not cause much lodging in any of the varieties except those which are naturally weak-strawed.

The recent rain storm was particularly timely for commercial grain growers since there was considerable late sown grain and this will give it a very good start towards making a crop.

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

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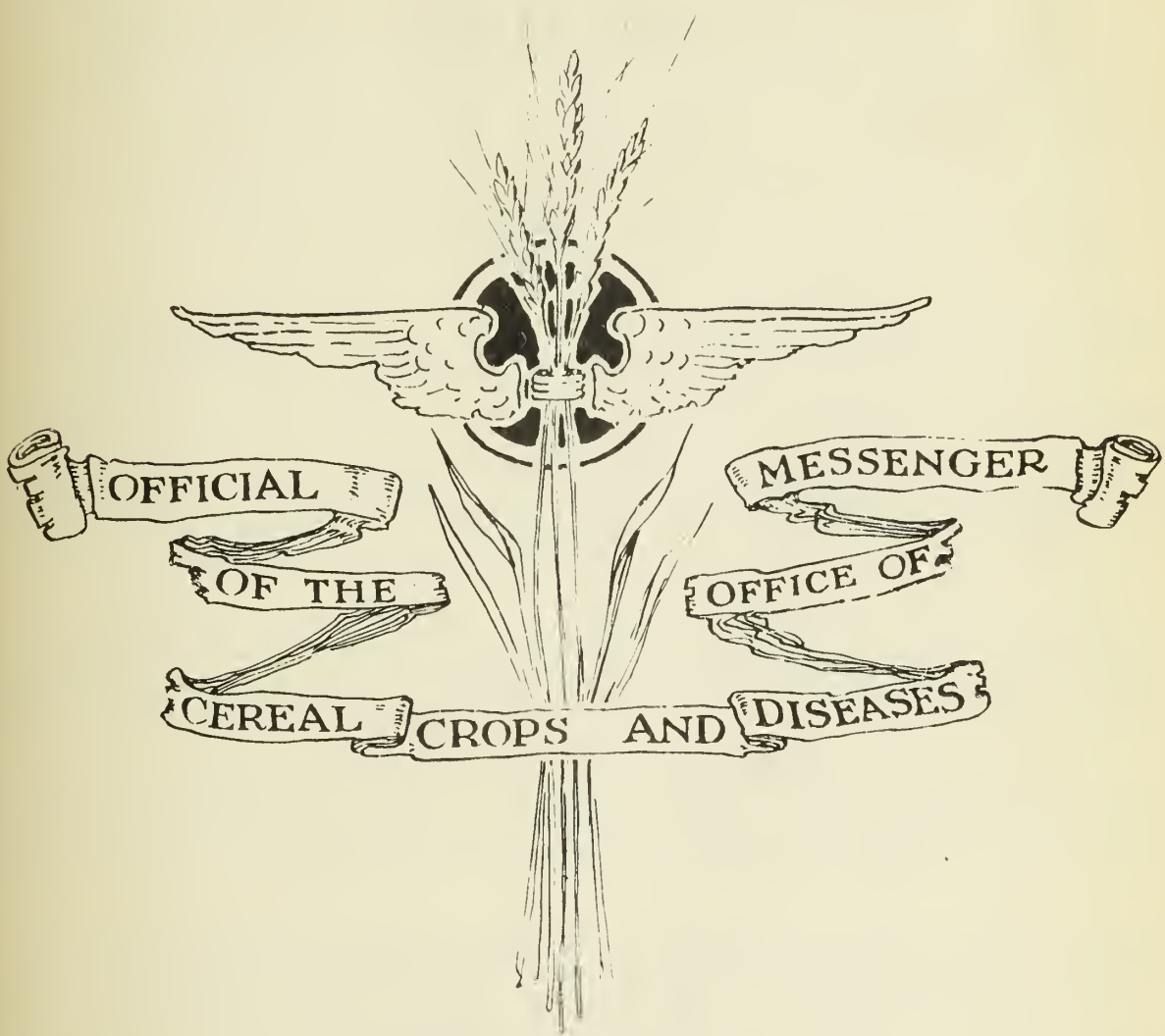
MAY 4 1928
PLANT INDUSTRY

CEREAL COURIER



BUREAU
OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 8

April 20, 1928
Personnel (April 11-20) and Field Station (April 1-15) Issue

PERSONNEL ITEMS

J. M. Hammerly, senior scientific aid in corn investigations, left Washington on April 21 for Florence, S. C., where he will plant corn in the cooperative experiment plats at the Pee Dee Substation.

L. D. Hutton, associate pathologist in charge of barberry eradication, left Washington on April 18 for a month's trip in some of the States of the barberry eradication area. In Wisconsin he will confer with cooperators concerning field plans for the coming season.

Mr. Hutton also will confer with members of The Conference for the Prevention of Grain Rust in Minneapolis regarding publicity matters. At St. Paul, he will be in conference with members of the staff of the Agricultural Experiment Station at University Farm.

In South Dakota Mr. Hutton will review the educational activities that have been conducted in that State for the past few months, and in Indiana he will confer with W. E. Leer, State Leader, in regard to barberry eradication demonstrations.

Dr. C. E. Leighty, senior agronomist in charge of eastern wheat investigations, will leave Washington on April 23 for Athens, Ga., to confer with officials of the George State College of Agriculture. He may also go to the Georgia Experiment Station at Experiment, Ga. Dr. Leighty will then proceed to Sacaton, Ariz., arriving about April 29. He will remain there for the month of May, taking notes on and harvesting wheats in the cooperative breeding nursery on the United States Field Station. On his return trip Dr. Leighty will visit points in Kansas, Tennessee, and North Carolina in the interests of wheat investigations. He will be away from Washington about six weeks.

J. M. Raeder, agent in the cooperative stripe-rust investigations conducted at Moscow, Idaho, was authorized to go about the middle of April to points in California, Arizona, New Mexico, and Texas to collect specimens of stripe rust, stem rust, and leaf rust of wheat and stem rust and crown rust of oats and to take notes on the occurrence of these diseases.

W. A. Walker, associate pathologist and State Leader of barberry eradication in Wisconsin, resigned his position on March 24 to accept an executive position with a commercial organization in Madison, Wis.

MANUSCRIPTS AND PUBLICATIONS

19 A brief note entitled "Grated Carrot Agar Favorable for Studies of Pythium," by Helen Johann, was approved on April 17 for publication in Phytopathology under Phytopathological Notes.

Galley proof of Farmers' Bulletin 1565 entitled "Shall I Buy a Combine?" by L. A. Reynoldson, J. H. Martin, and W. R. Humphries, was read on April 12.

Galley proof of article entitled "Some Plant Characters Determining Yields in Fields of Winter and Spring Wheat in 1926," by Karl S. Quisenberry, for publication in the Journal of the American Society of Agronomy, was read on April 20.

The article entitled "English or Latin Plurals for Anglicized Latin Nouns?" by Carleton R. Ball, appears in American Speech 3 (4): 291-325. April, 1928.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST STATES (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding H. H. Love)

HUMID MISSISSIPPI VALLEY STATES (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H.F.Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

Iowa State College, Ames (Barberry Eradication, P. W. Rohrbaugh)

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Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, H. S. Jackson and E. B. Mains)

Purdue University College of Agriculture, La Fayette (Barberry Eradication, W. E. Leer)

OHIO

Ohio State University, College of Agriculture, Columbus (Barberry Eradication, J. W. Baringer)

MICHIGAN

Agricultural College, East Lansing (Barberry Eradication, W. F. Reddy)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

Department of Agriculture, State Capitol Annex, Madison (Barberry Eradication, W. A. Walker)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, O. S. Aamodt)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

Agricultural Experiment Station, University Farm, St. Paul (Barberry Eradication, L. W. Melander)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J.B.Sieglinger)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots,Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

COLORADO

Agricultural College, Ft. Collins (Barberry Eradication, E. A. Lungren)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, ----------)

College of Agriculture, University Farm, Lincoln (Barberry Eradication, A. F. Thiel)

WYOMING

College of Agriculture, University of Wyoming, Laramie (Barberry Eradication, E. A. Lungren)

SOUTH DAKOTA

College of Agriculture Brookings (Barberry Eradication, R. O. Bulger)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Agricultural Experiment Station, State College Station, Fargo (Barberry Eradication, G. C. Mayne)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (April 18)

Another light snowfall last night has temporarily halted seeding and other field work at the Substation. Seeding at the Substation is well along, however, for the time of year. Seeding of the rotation and tillage plats was completed during the week of April 9. Varietal plats of spring wheat were sown April 12, which is 4 days earlier than the average date at this station. Oat varieties were sown April 16 and the barley varieties on the 17th. Much of the seeding has been done between or during snow squalls.

Due to unusually warm weather in March, field work in this vicinity began earlier than usual, but due to frequent freezes and light snowstorms, no large acreage has yet been seeded.

Seed is being prepared for seeding the cereal nursery which will be next on the program of cereal work.

Winter wheat and rye in plats are in fairly good condition. The stand in the winter-wheat nursery is rather thin due partly to dry weather in the fall as well as to some winterkilling.

Soil moisture conditions are somewhat better than usual at seeding time.

Northern Great Plains Field Station, Mandan (Flax Breeding, J.C.Brinsmade,Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (April 16)

The weather during the first half of April has been cold. The maximum temperature recorded was 75 degrees on April 1. Since that date, however, the daily maximum temperatures have ranged from 30 to 54 degrees F. The minimum temperature was 2 degrees on April 7. The total precipitation for this period was 0.03, all of which was snow.

The wheat varietal plats were seeded on April 11. This is 8 days earlier than the average date of seeding of the plats at the Station.

The seeding of wheat by the farmers has been delayed to some extent by the recent cold weather. It is estimated that about one-half of the acreage to be sown is now seeded.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles)

State College of Agriculture, Bozeman (Barberry Eradication, W. L. Popham)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)(April 14)

We have had poor drying weather during the past two weeks, and the land is still too wet to plow. It is cloudy today and looks as if we might get a shower. Very few of the rice growers are able to get on their land at the present time, and it looks as if a good deal of the rice crop will be sown later than normal this spring.

The market for paddy rice is rather weak and the crop is moving slowly. There probably will be quite a large carry-over of last year's crop. There no doubt will be a reduction in the acreage sown to rice in California this spring.

University Farm, Davis (Cereal Agronomy, V. H. Florell) (April 16)

The weather during the first two weeks in April has continued favorable for cereal crops. The early and midseason varieties of wheat, barley, and oats are in various stages of heading, while some of the late winter-habit varieties have not yet begun heading. Vaughn and Atlas barley are now fully headed. As in previous seasons, the Vaughn is almost entirely free from leaf diseases, while Atlas shows considerable infection.

Hard Federation x Bunyip, the earliest of the wheats in the comparative experiments, is now fully headed. Most of the Hard Federation x Marquis hybrid selections are beginning to head and promise to make a good showing again this season. Fulghum and Kanota oats and the Fulghum selections began heading five or six days ago.

The early sown commercial fields of barley were observed to be fully headed about a week ago. The late-sown fields are making rapid progress, and the indications are that a good crop will be harvested.

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

The following report was received too late for insertion in its proper place.

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love) (April 20)

During the past two weeks Mr. W. T. Craig has been busy making a number of crosses of Ithaca wheat and oats, using the material that has been growing in the greenhouse during the past winter. A number of new rather important crosses have been made which will shed some light on certain genetic phases of cereal breeding.

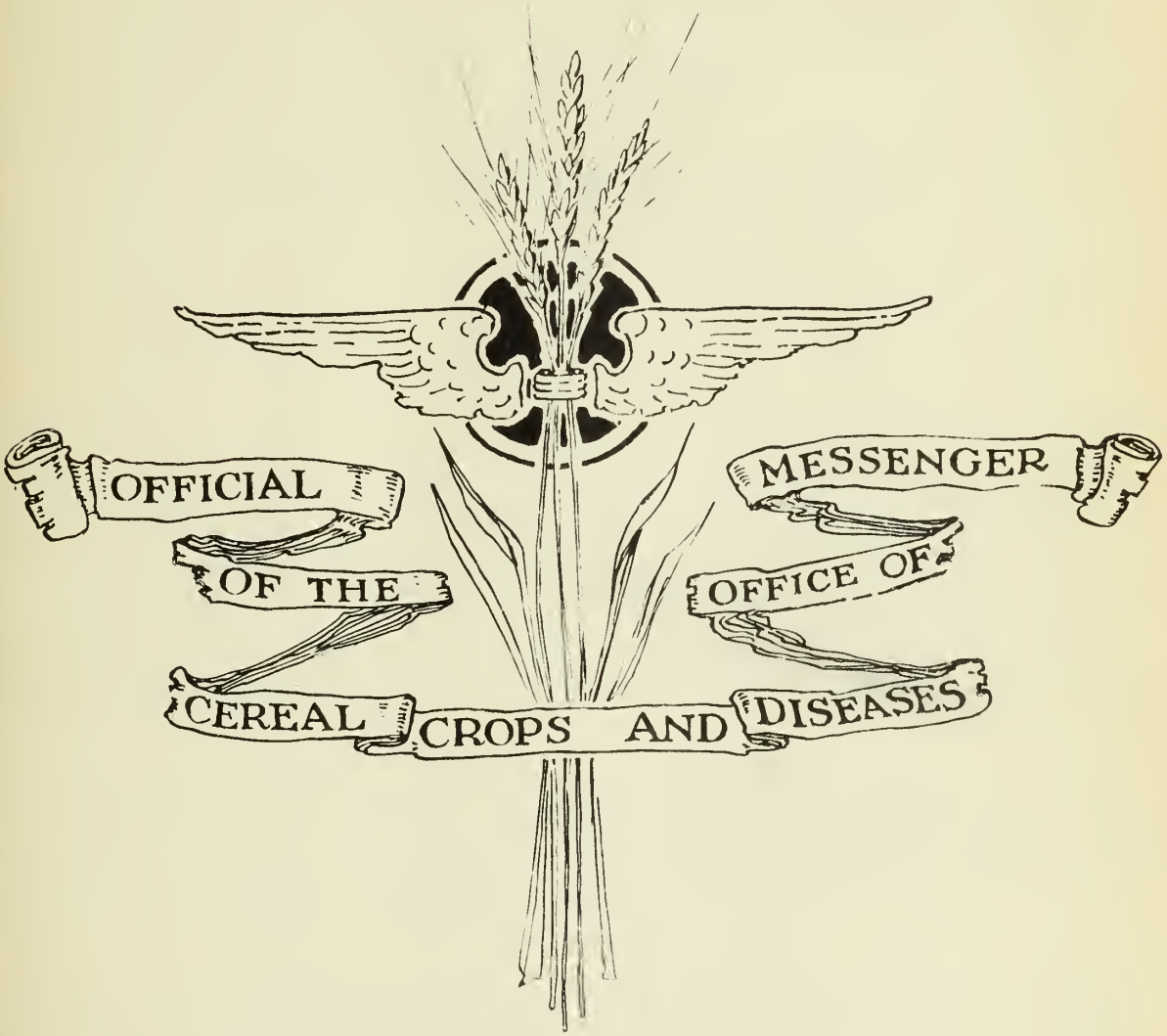
Spring has opened up rather slowly. We have had some rather warm days, but a considerable number of cool ones, so that spring seeding has not been more than well begun. Our hybrid nursery, consisting of oats and spring wheat, has been nearly all sown and will be completed by April 21. The ground is prepared and it is expected that the seeding of the rod-row nursery of barley and oats will be begun on April 23. Weather permitting, all of the seedings, both in the rod-row nursery and the increase plots, should be completed in the week of April 23.

Preparations have been made for about the usual number of trials of oats and barley in various parts of the State.

The distribution of our improved varieties has gone forward this year in a very gratifying manner. The only serious point in connection with this was that we did not have enough seed of the variety Cornellian to satisfy the demand, as all of this variety was sold out very early.

1928

CEREAL COURIER



BUREAU
OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 9

April 30, 1928
Personnel (April 21-30) and Project Issue

PERSONNEL ITEMS

L. C. Burnett wrote on April 19 that the unfavorable weather that had prevailed at Ames, Iowa, for the past two weeks had retarded germination in the various seedings of oats in the nursery. There probably had been some injury to germination in the uniform rust nursery and in the 5-foot head rows sown early in April. Seed of the varieties and strains sown in 15-foot rows, received from Washington, D. C., still was in a healthy condition on the date mentioned, and there was evidence that the seedlings would emerge within the next few days. Seed of the barley varieties sown on March 3 also apparently was still alive.

R. R. Childs wrote from Athens, Ga., on April 18 that grain was in excellent condition at the Coastal Plain Experiment Station, Tifton, Ga. Hardly any winterkilling had occurred, and the earlier varieties of wheat and oats were beginning to head. Rust was beginning to appear on a number of them, however; this may result in decreased yields.

At Athens the grains were coming along in a satisfactory way, particularly wheat and rye. A few of the earlier varieties of wheat were expected to begin heading within 10 days. The spring-sown oats were making a very satisfactory growth, yields of course depending upon future seasonal conditions.

Frederick D. Richey, agronomist in charge of corn investigations, left Washington on April 26 to visit the agricultural experiment stations in some of the Corn-Belt States in the interests of cooperative agronomic corn-borer research.

H. H. Thornberry, agent in the investigations of stem rust epidemiology conducted at University Farm, St. Paul, Minn., under the direction of E. C. Stakman, has been authorized to make field studies on the distribution and abundance of stem rust on grains and grasses in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin, and also in the State of Oaxaca and other points in Mexico.

VISITORS

H. M. Bainer, Director of the Southwestern Wheat Improvement Association, with headquarters at Kansas City, Mo., paid several visits in the Office in the week of April 23.

Señor Don Manuel Zavala, first secretary of the Nicaraguan legation, was an Office visitor on April 27.

MANUSCRIPTS AND PUBLICATIONS

20 A revision of Farmers' Bulletin 1358 entitled "Growing Rye in the Western Half of the United States," by John H. Martin and Ralph W. Smith, was requested on April 21.

Page proof of Farmers' Bulletin 1565 entitled "Shall I Buy a Combine?" by L. A. Reynoldson, J. H. Martin, and W. R. Humphries, was read April 24.

The article entitled "Further Experiments with Seed Treatments for Sweet-Corn Diseases," by C. S. Reddy and J. R. Holbert, appears in the Journal of Agricultural Research 36 (3): 237-247, figs. 1-5. February 1, 1928. (The investigations conducted near Bloomington, Ill., were in cooperation with Funk Bros. Seed Company.)

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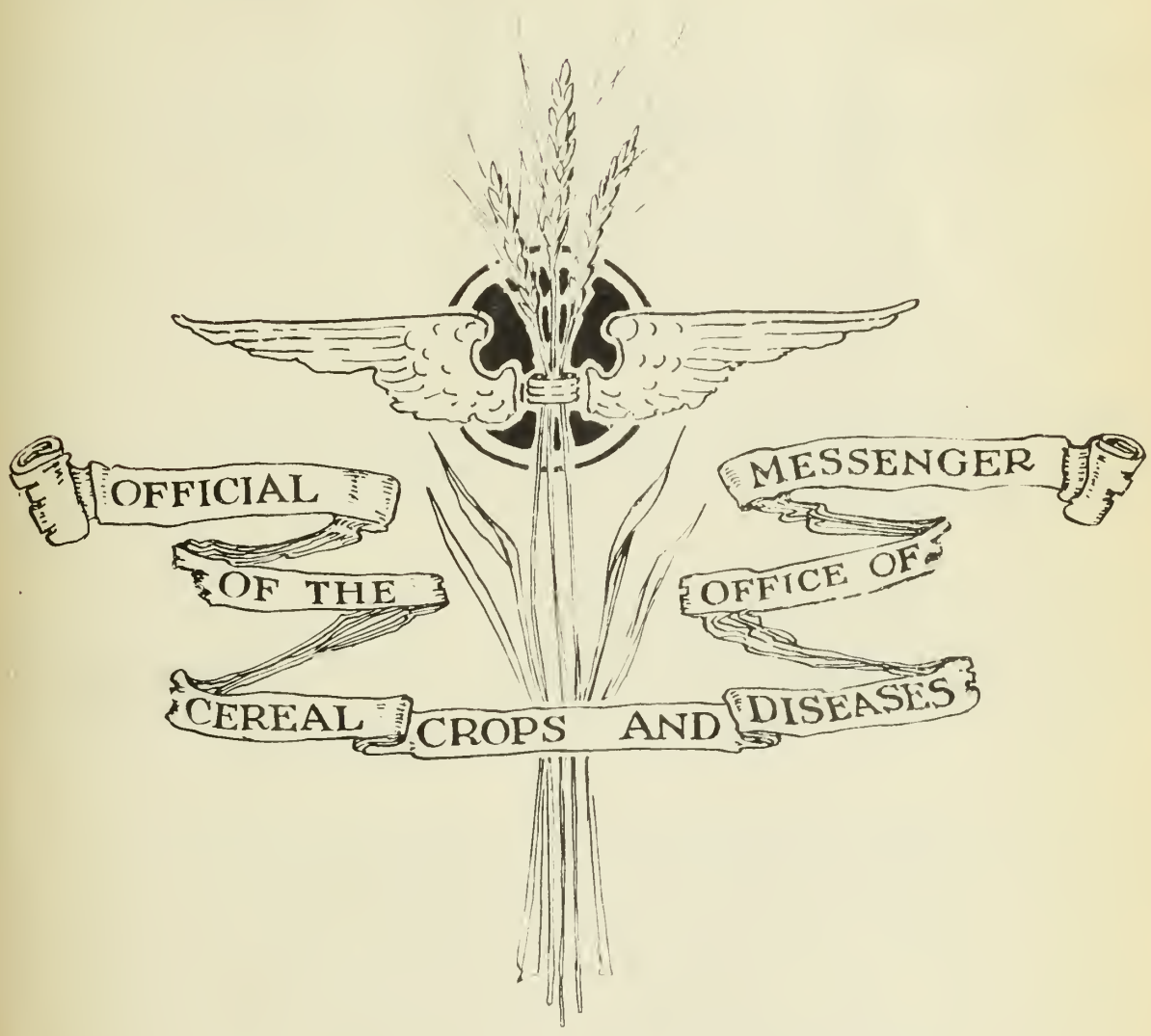
MAY 21 1928
PLANT INDUSTRY

CEREAL COURIER



BUREAU
OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 10

May 10, 1928
Personnel (May 1-10) and Field Station (Apr. 16-30) Issue

PERSONNEL ITEMS

Dr. J. R. Holbert, agronomist in charge of investigations of corn root, stalk, and ear rots, in cooperation with Funk Bros. Seed Company, Bloomington, Ill., in a letter dated May 5 makes the interesting statement that his corn plantings are farther along at this date in 1928 than they were on June 1 last year.

Lynn D. Hutton, associate pathologist in charge of barberry eradication, returned to Washington on May 5, after a 20-day field trip through a part of the barberry-eradication area. At Madison, Wis., Mr. Hutton conferred with officials of the University of Wisconsin and the State Department of Agriculture with regard to the appointment of a State Leader to take the place of Wm. A. Walker, who resigned on March 24.

At Minneapolis and St. Paul, Minn., he discussed the publicity problems of the campaign with officials of The Conference for the Prevention of Grain Rust and the Plant Pathology Department of the Minnesota Agricultural College. On April 28 he addressed the barberry field agents who are to work in Minnesota this summer under the direction of L. W. Melander, State Leader. In South Dakota, Mr. Hutton conferred with State Leader R. O. Bulger relative to the educational program for 1928. In each of the States visited considerable time was spent in discussing plans for increased survey efficiency. As a result of these conferences, an improved method of checking future survey activities has been devised.

Mr. Hutton reports that field survey is somewhat delayed by the lateness of the spring season. This is particularly true in Minnesota and the Dakotas. On April 28, 29, and 30, North and South Dakota and Minnesota experienced one of the worst dust storms of recent years. Fortunately, small grain was not far enough advanced to be damaged to any great extent by these storms. A few instances of the seed being blown out of the ground were reported but observations through eastern South Dakota and southeastern Minnesota indicate that no great loss had occurred.

VISITORS

Director H. W. Barre, of the South Carolina Agricultural Experiment Station, was an Office visitor on May 8.

Dean L. E. Call, Director of the Kansas Agricultural Experiment Station, was an Office visitor on May 8 and 9.

Lewis Y. Leonard, formerly assistant plant pathologist of this Office, and for the past eight years County Agent of Sacramento County, California, was an Office visitor in the week of May 7. Mr. Leonard is en route to Port au Prince, Haiti, where he has accepted the position of Horticulturist, under the direction of Dr. Geo. F. Freeman, Director General of Agricultural Techniquo and Professional Education.

Ali Nouman, who has been superintendent of a 2,000-acre farm belonging to the President of Turkey, and who brings letters of recommendation from officials of the American Y. M. C. A., of Constantinople, was a visitor in the Office from May 2-4. An itinerary has been prepared for him jointly by the Office of Dry-Land Agriculture and the Office of Cereal Crops and Diseases that will enable him to visit State agricultural experiment stations and substations and United States field stations in most of the western States.

Dr. G. Van der Lee, Chemist, The Novadel Laboratory, Deventer, Netherlands, was an Office visitor in the week of May 7. Dr. Van der Lee represents the flour mills of his country. He expects to attend the Conference of Cereal Chemists at Minneapolis, Minn., in June. He also will visit the large milling centers of the United States, including Kansas City, Minneapolis, and Buffalo, and the agricultural experiment stations which have milling and baking laboratories in order to make a study of the milling industry. Later Dr. Van der Lee intends to go to Winnipeg and Ottawa to make similar studies.

MANUSCRIPTS AND PUBLICATIONS

21 A manuscript entitled "Seeing All Sides of a Complex Problem," by Carleton R. Ball, Senior Agronomist in Charge; and

22 A manuscript entitled "Wheat Breeding for Yield, Quality, and Disease Resistance," by J. Allen Clark, Agronomist in Charge of Western Wheat Investigations, were submitted on May 10 for publication in the Report of the First Annual Wheat-Breeding Conference (held at the North Dakota Agricultural College, Fargo, N. Dak., March 27, 1928).

Galley proof of article entitled "Inheritance of Earliness and Other Agronomic Characters in Rice," by Jenkin W. Jones, for publication in the Journal of Agricultural Research, was read on May 8.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, H. S. Jackson and E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, O. S. Aamodt)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (April 20)

Both spring and fall grains are looking very fine and are growing rapidly at the present time. Spring wheat and spring oats were slightly damaged by frost, but winter wheat seems not to have been retarded to any degree.

Letters from Texas and Oklahoma state that both wheat and oats are in excellent condition in those States. Wheat apparently is in poor condition in western Oklahoma and western Texas.

April has been an unusually cold month in the Southwest and has been marked by frequent frosts and freezing temperatures. There has been a great deal of windy weather. The first four days of April were one continuous wind storm in which the wind blew day and night from the south, on the fourth day attaining a velocity of 60 miles an hour. I have ascertained that this wind blew from the south at Stillwater, Okla., and Denton, Tex., on those same days. Cloud movements which I observed here in Manhattan indicated that the wind was blowing from the same direction at a considerable height. The velocity of the wind was so great on the fourth day that the Government air forces at Fort Riley had orders not to take planes into the air. We have had numerous winds both from the south and north since that time.

During this period we have had very little moisture. The ground is very dry but not too dry for good development of cereals. Naturally, the dry condition of the ground in Texas, Oklahoma, and Kansas and the frequent high winds have resulted in many dust storms. So far, I have been unable to locate leaf rust here at Manhattan although I have made many careful searches.

At Denton, Tex., there is considerable leaf rust, however, although its development has been retarded by dry weather. At Stillwater, Okla., there is a great deal of leaf rust and it seems to be spreading rapidly. I received leaf specimens from Dr. Griffee yesterday carrying as high as 40 per cent of fresh uredinia. Dr. Griffee states that if weather conditions are favorable, the stage is all set for another heavy epidemic of leaf rust at Stillwater.

At Harper, in southern Kansas, less than 100 miles from Stillwater, there is no leaf rust. I have not had a single report of leaf rust from any point in Kansas although I have had numerous reports of rust in Oklahoma and Texas. Apparently rust did not overwinter in Kansas this year in measurable quantity or if it did, spring conditions have been so unfavorable that its development has been suppressed.

So far, I have seen no stem rust nor have I had reports of any from any of my stations in the Southwest. Dr. Mangelsdorf reports a small amount of leaf rust at College Station, Tex., but nothing like the amount present at Stillwater, Okla.

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (May 2)

The Sixteenth Annual Round-Up was held on April 28. Approximately 1,500 visitors were present. Tours were made over the experiment grounds during the forenoon. Discussions on marketing problems and the results of feeding experiments occupied most of the afternoon. The Round-Up closed with the annual Phillip-Aicher Banquet at the Brunswick Hotel, where representatives of the farm press, college officials, and invited guests enjoyed a pleasant evening together.

The Sixth Annual Livestock and Grain Judging contest was held on April 27 the day preceding the Round-Up. Seventy-three qualified teams, besides alternates and coaches from the high schools and 4-H Clubs of western Kansas were in attendance in the two divisions of the contest. The Hays Chamber of Commerce gave a banquet for the contestants and their coaches in the evening, at which time appropriate silver loving cups, or medals, were presented to winning teams and individuals. The judging contests at the Hays station have now become a fixed annual affair looked forward to each year by an increasing number of contesting teams.

In the immediate vicinity of Hays crop conditions are favorable, although April was a dry month with much wind and cold weather. Wheat on the station is making normal growth and probably will head about May 20. To the north and west of Hays, wheat looks less favorable. From Hays south through the main wheat belt of Kansas the crop prospects can be said to be excellent. Winterkilling was not a factor south of Hays, but in the northwestern part of the State a severe drought did not permit the plants to emerge properly. All spring crops at the station and on the Cereal Project are now making good growth but in the early part of April were considerably retarded by cold weather. The first corn was planted on May 1. Preparations are being made for seeding sorghums on May 15 and continuing at stated intervals.

There is a satisfactory demand for pure seed of the four recommended sorghum varieties featured by the Hays station. The station produced approximately 500,000 pounds of pure seed last year. This seed was all recleaned and graded and is being sold to the farmers at a nominal price either untreated, or treated with copper carbonate. The four varieties of sorghum which the station distributes to the farmers are selected strains of Pink kafir, Dawn kafir, Feterita, and Early Sumac.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, ----------)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (April 30)

Cool weather prevailed during most of the month of April. The temperature was below freezing nearly every night except during the last week of the month. The maximum temperature was about 75 degrees on April 20. This maximum was exceeded by a temperature of 76 degrees on March 22. The cold weather has delayed the germination of grain so that wheat sown about April 10 or before is just emerging.

The rod-row nursery of about 1,500 rows of wheat, oats, and barley, was sown April 23 to 25. About 250 rod rows were sown in the wheat-smut nursery, and 282 eight foot rows of new barley varieties were sown. There remain to be sown the head rows, the oat-smut nursery, and the hybrid-wheat-smut nursery. Flax and proso varieties in plats remain to be sown, also date-of-seeding plats of wheat, oats, and barley. The corn plats and nursery will be planted around the middle of May if the weather permits.

Seeding in this vicinity has made good progress during the past two weeks, wheat seeding being nearly completed and considerable oats and barley having been sown.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (May 2)

Land has been prepared for the plat and nursery seedings of flax.

The first seedings in the flax date, rate, and tillage experiment were made on April 21 and 30. Snow still remaining on the plats on April 20 prevented seeding on that date. Flax sown on April 21 is just beginning to emerge.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (May 2)

The weather during the latter part of April was unfavorable for spring work until April 23. There was a heavy snowstorm on April 17, with the snow remaining on the ground for several days. Since April 23, however, the weather has been more favorable for field work. The maximum temperature was 76 degrees on April 28, the minimum 1 degree on April 18. Precipitation during this period was 0.96 inch. This makes a total of 0.99 inch for the entire month.

The wheat varieties seeded in the field plats on April 11 have emerged with good stands.

Seeding of the wheat nursery has been completed with the exception of some material which was grown in the greenhouse at Arlington Farm, Va., during the past winter.

The oat varietal plats were sown on April 17, and the barley varieties on April 26.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, V. H. Florell) (May 1)

The December-sown cereals are now fully headed with the exception of the late maturing winter varieties and the extremely late spring varieties. The weather has been very warm during the past week so that plant development has been very rapid. Varieties that normally require at this time of the year from 10 to 12 days to come into full heads from date of first heading have passed through this stage during the past week, in from 7 to 9 days. The barley nursery material sent from Washington and sown on February 22 contains several varieties which have begun to head. The varieties in the March date of seeding have not yet begun heading.

Notes on the percentage of leaf infection on the barleys were taken during the past week. While there is considerable rhyncosporium it does not seem so abundant as in some seasons. Helminthosporium diseases also are abundant on some varieties. Many of the barleys also seem to have the lower leaves "fired." This probably was the result of early spring drought. A light infection of rusts of wheat has been observed. Heavy infection of yellow or stripe rust of wheat (P. glumarum) has been observed on some early Indian varieties. Some of the hybrid wheats also seem to be infected. It is not likely that the rusts will assume epidemic proportions as the plant tissues in most varieties are now becoming hardened and the weather is fairly dry.

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, ----------

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L. W. Melander (May 2)

The barberry-eradication educational campaign in the schools of Minnesota is about completed for this school year. Since last fall, we have sent rural lesson plans to 2,370 schools in 20 counties. In addition, we have furnished 95 teachers' training departments with lesson plan sets. Each teacher was asked to fill out a report card, giving the number of pupils, the number of barberries found, etc., and mail them to this office. We still are receiving many of these reports. The biology department of every high school in the State was furnished with a high-school lesson plan. In addition, we furnished the Botany Department of the University of Minnesota with 350 lesson plans. It is planned within the next few weeks to get in touch with the normal schools and furnish them material for the summer and fall sessions.

In all the counties to which rural school lesson plans were mailed, news articles were furnished to all papers in the county, announcing the fact that the children were being taught the relation of common barberry to black stem rust. A total of 130 articles were sent.

Wednesday, April 25, was the first day of the 1928 survey. On this date, six barberry field men were placed in Hennepin County which is to be surveyed by the intensive method. This is a very difficult county to survey and it is doubtful whether or not it will be completed this year. We are expecting to find many bushes. It is not planned to survey the City of Minneapolis, which is located in Hennepin County, this year. We are anxious to do all we can in the rural districts first.

The possibilities for pycnial infection at the present time are not very good. We haven't had a real soaking rain which would permit the germination of telial spores since the barberry leaf buds started to develop. On Tuesday, May 1, examination of several bushes did not result in the finding of rust infection in the pycnial stage on common barberry bushes. There is a possibility that infection from aeciospores will be late this year in Minnesota. The weather at present is very favorable for growth of small grains.

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren [May 2]

During the winter months we distributed a considerable quantity of educational material to the schools in Colorado and Wyoming. In addition a supply of bulletins was placed at all the grain elevators. Misc. Pub. 7 entitled "Bread or Barberries" was sent to all the names on our mailing list for Colorado and Wyoming. From this we had many more requests for additional information which also was supplied.

Our school for barberry scouts was started in April. There are 10 men in the class, which meets every Monday night from 7:00 to 8:30 P.M. From this class, which will continue until the college closes, we hope to get men for the summer's work. On the first of June three men will start the survey in Weld County. We have a big job ahead of us as this county is large and considerable work will have to be done by foot scouting.

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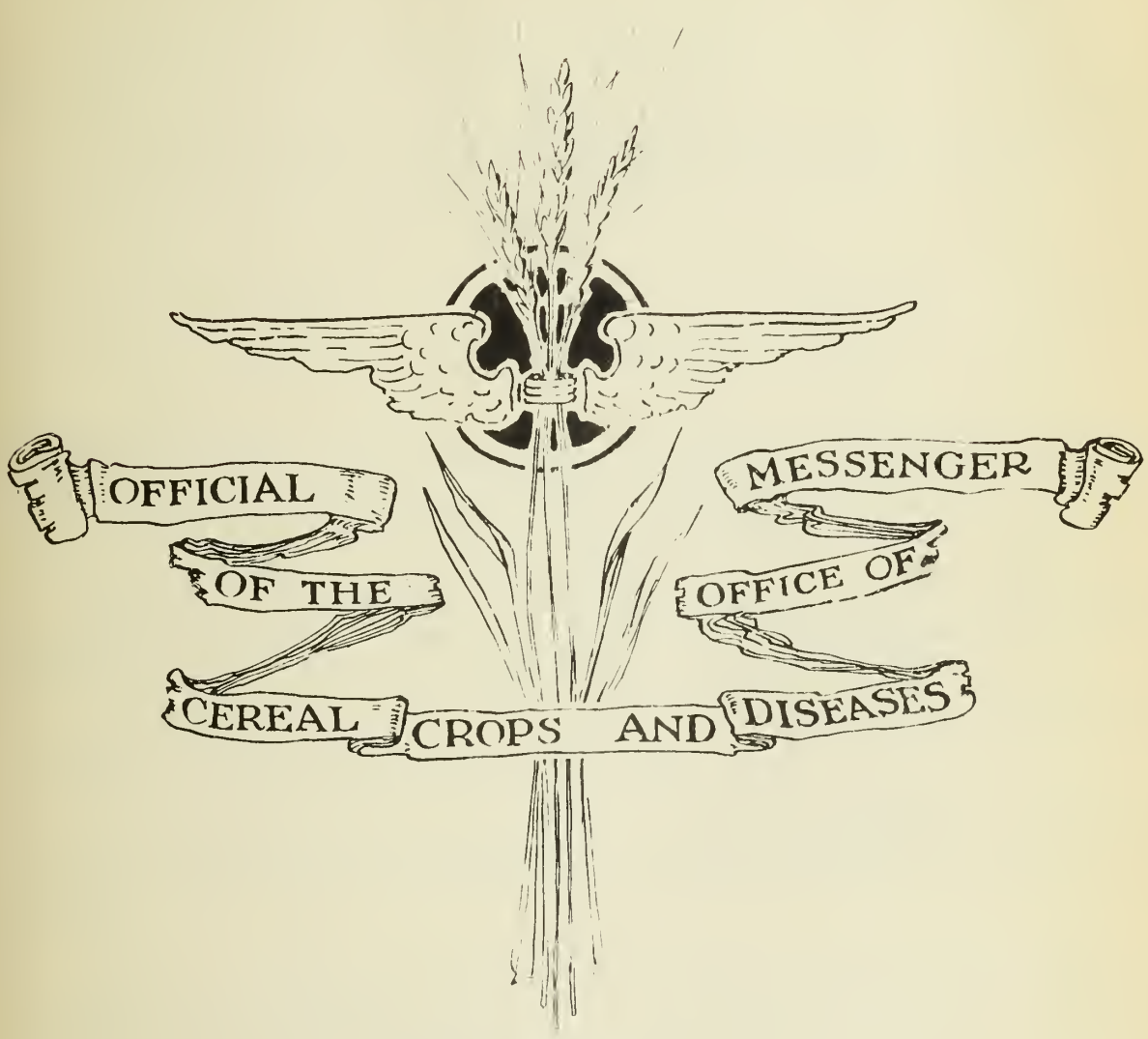
PLANT

CEREAL COURIER



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C E R E A L C O U R I E R

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Vol. 20 No. 11

May 20, 1928
Personnel (May 11-20) and Field Station (May 1-15) Issue

PERSONNEL ITEMS

Dr. C. R. Ball, senior agronomist in charge, will leave Washington on May 22 for Hartsville, S. C., to visit the extensive plant breeding operations conducted by David R. Coker. Dr. Ball also may stop at Raleigh, N. C., to visit the Agricultural Experiment Station.

Benjamin H. Duddleston, associate agronomist in the cooperative investigations of corn root, stalk and ear rots at La Fayette, Ind., since 1919, resigned his position on May 12 to engage in private business.

Miss Frances M. Hanson, junior clerk in the office of the State Leader of barberry eradication in Iowa, resigned her position on May 12.

F. D. Richey, agronomist in charge of corn investigations, returned to Washington on May 16 after an absence of nearly three weeks in some of the Corn-Belt States in the interests of cooperative agronomic corn-borer research.

Ralph R. St. John was appointed on May 14 as associate agronomist in the cooperative investigations of corn root, stalk and ear rots at LaFayette, Ind., to succeed B. H. Duddleston, who resigned on May 12. Mr. St. John will have charge, under the direction of Dr. G. N. Hoffer, of the breeding and development of strains of corn suited to conditions in Indiana and similar territory with especial reference to resistance to the various root, stalk, and ear rots, and to the unfavorable action of iron and aluminum in the soils.

Dr. E. C. Stakman, professor of plant pathology at the University of Minnesota, and agent in the stem-rust investigations conducted at University Farm, St. Paul, has received the Emil Christian Hansen prize, consisting of a gold medal and 2,000 crowns, for his works on the diseases of plants. The prize was handed to the American chargé d'affaires at the legation at Stockholm on May 8 in the absence of Dr. Stakman.

T. R. Stanton, agronomist in charge of oat investigations, was called to his home in Grantsville, Md., on May 17 on account of the death of his mother.

VISITORS

J. W. Pincus, of the Agricultural Department, Amtorg Trading Corporation, and Prof. J. A. Mirtoff, Director of the Russian Bureau of Agricultural Information, both with headquarters in New York City, called at the Office on May 17. Prof. Mirtoff desired assistance in outlining an itinerary for a delegation of Russian agriculturists who are planning to visit the United States this year to study the practical phases of crop practices in this country. He also stated that the Soviet Government wishes to obtain American managers for a number of the large Russian estates that have come under government control since the Revolution, the idea being to introduce modern American methods and implements.

MANUSCRIPTS AND PUBLICATIONS

23 A manuscript entitled "Pythium arrhenomanes n. sp., a Parasite Causing Maize Rootrot," by Charles Drechsler, was approved May 12 for publication as a note in Phytopathology.

24 A manuscript entitled "Effect of the Continuous Selection of Large and Small Wheat Seed on Yield, Bushel Weight, Varietal Purity, and Loose Smut Infection," by J. W. Taylor, was approved on May 19 for publication in the Journal of the American Society of Agronomy.

The article entitled "Some Plant Characters Determining Yields in Fields of Winter and Spring Wheat in 1926," by Karl S. Quisenberry, appears in the Journal of the American Society of Agronomy 20 (5): 492-499. May, 1928.

Ill. Agr. Expt. Sta. Bul. 306 entitled "Experiments in Crossing Varieties As a Means of Improving Productiveness in Corn," by L. H. Smith and A. M. Brunson, and bearing date of May, 1928, has just been received. (p. 373-386)

NOTICE

The Western Section of the American Society of Agronomy will hold its 11th Annual Meeting at Davis and Berkeley, Calif., from June 19 to 21, 1928.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

Arlington Experiment Farm, Rosslyn (Leaf Rust, H. B. Humphrey and C. E. Leighty) (May 19)

Leaf rust of wheat, Puccinia triticina, was first observed at Arlington Experiment Farm this spring on May 7. The infection apparently was the result of urediniospores that had survived the winter on the lower leaves of plants of 1915B, an early maturing selection from the variety Purplestraw. Up to May 20 little more than a trace of leaf rust had developed.

On May 14 a fraction of one per cent of leaf rust of barley, P. anomala, was found on Tennessee 3546, and on Wisconsin Winter barley.

On May 16 an abundance of leaf rust of rye, P. dispersa, was found on the variety Smoothneck. Other varieties of rye showed only a trace of this rust up to May 19.

The first application of sulphur dust for the prevention of leaf rust of wheat on the wheat plats at Arlington Farm was made on May 16. The experiments this year involve the use of (1) Kolo Dust, (2) a sulphur dust furnished by the Consolidated Gas and Electric Power Co., of Baltimore, Md., and (3) a dust consisting of Kolo Dust to which had been added one per cent of powdered potassium permanganate. Should an epidemic of leaf rust develop such as obtained last year the results from these several dusting experiments should prove very interesting.

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert) (May 12)

Our field work is much farther advanced than it was last year. The last five weeks have been the most strenuous of any period that I have ever experienced. Ordinarily there are occasional rains which keep us out of the field for a few days, but this year the weather has been unusually favorable. Moreover, judging by what is actually happening, the majority of the corn growers are convinced that early planting deserves a little more consideration. I would estimate that approximately 75 per cent of the corn throughout this section has been planted already. There has been more general interest in good seed this spring than at any previous time in the past 13 years.

At my suggestion Mr. Miller is having three of the salesmen for the Funk Bros. Seed Co., collect a large number of samples of seed corn from the planter boxes throughout central Illinois. I think it is worth while to have a little more definite information concerning the quality of the seed corn that is actually being planted. We expect to use about 200 of these samples in making up what might be designated as a composite of "farmers' seed." This composite will be used in a seed treatment experiment that will be planted this next week. Dr. Koehler also has secured a number of "planter box" samples, approximately 70. I am sure you will be interested in seeing the corn that this seed produces.

I was very much interested to learn that these men find that over 50 per cent of the seed corn throughout central Illinois has been given a seed treatment. Mr. Fuller, manager of approximately 9,000 acres in McLean County, has estimated that 90 per cent of the seed corn in this county has been treated.

We have our field work better organized than ever before, and we have received better cooperation than ever before. We have done our best to meet all of this cooperation (from the Funk Bros. Seed Co., the University of Illinois, etc.) more than half way.

The temperature fell to 26 degrees F. last night and our corn that was 2 to 3 inches high was not injured.

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, H. S. Jackson and E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, O. S. Aamodt)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (May 15)

The winter wheat which survived the winter probably will yield well. The yield probably will be influenced by the stand.

Judging from seed sales there will be quite an increase in the grain sorghum acreage over last year; there also will be more broomcorn planted in Woodward County. This is the first year that there has been a brisk and increasing demand for Sunrise kafir seed. It may be because of an increase in the number of silos or a specialization in sorghums, that is, milo for grain and Sunrise kafir for forage.

The precipitation so far in 1928 has been: January 0.01, February 1.63, March 0.97, April 1.58, and first half of May 4.10 inches, or a total of 8.29 inches. Of the May precipitation, 0.70 inch was recorded on the 2nd and 3rd, while the remainder, 3.40 inches, has fallen since the 10th.

Maximum temperature for May, 95 degrees on the 9th; minimum, 43 degrees on the 5th. Wind has been less than average.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (May 15)

The rust situation in the southwestern Great Plains area has not shown any very marked changes in the past two weeks. Leaf rust had developed to a considerable extent at Denton, Tex., and Stillwater, Okla., but did not appear in experimental plats at Harper in southern Kansas until May 2. On May 7, Mr. Patton, who is in charge of the plots at that station, wrote me that leaf rust seemed to have developed almost over night and was easily found in many varieties.

I was able to find a bare trace of leaf rust at the agronomy farm here on May 9. Only by careful search, however, was a uredinium found here and there, and then only on old leaves. There still is practically no leaf rust in my nursery and even that resulting from artificial inoculation is not spreading to any extent.

Wheat has made a very satisfactory spring growth throughout the southwestern Great Plains but is not nearly so rank as it was last year. It is much better in southern Kansas and northern Oklahoma than it is in the vicinity of Manhattan. Most of the hard red winter wheats are beginning to head and the earlier varieties are in full head. There has been a great deal of rain in northern Texas, Oklahoma, and southern Kansas and precipitation is continuing every few days. There is sufficient leaf rust in that area to cause a heavy late epidemic if the present conditions continue. The past week also has been very favorable for rust infection here at Manhattan, being marked by a great deal of cloudy damp weather. I should not be surprised if we had a fairly good late infection.

I am leaving Thursday to visit my southern nurseries. I shall proceed to College Station, Tex., where I shall take rust notes on a uniform rust nursery and confer with Dr. P. C. Mangelsdorf on questions pertaining to breeding for resistance. From there, Dr. Mangelsdorf and I will proceed to Denton where notes will be taken on another uniform nursery. I shall then visit sowings at Stillwater and Woodward, Okla., and finish the trip by visiting the nursery at Harper, Kans. I expect to return to Manhattan about May 28 or 29. I shall report to you on rust conditions in the south as soon as I have returned.

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, ----------)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (May 17)

Dry weather prevailed during the first ten days of May. Temperatures were above normal much of the time. Cereal crops made rapid growth during this period. A maximum temperature of 87 degrees was noted on May 8, and the temperature was above 80 degrees for several days. The drought was broken by a slow drizzling rain beginning May 13 and continuing most of the time until May 15. A total of 1.02 inches of rain fell which is practically all that has fallen this month. All crops have been greatly benefited by the rain, although they were not suffering for lack of moisture.

All cereal varieties in plats and nursery with the exception of flax and proso, have emerged with fairly good stands, and are in excellent condition. Flax varieties were sown May 11. The last seeding in the date-of-seeding experiments with varieties of wheat, oats, barley, and emmer, was made today, the ground being too wet for seeding yesterday.

Ground is being plowed for corn varieties and the varieties in plats and selections in the corn nursery will be planted this week if possible.

Stand counts were made in the winter-hardiness nursery today, and showed less winterkilling than last year.

There has been no killing frost this month, the minimum temperature being 31 degrees on May 10.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (May 17)

Flax sown on April 21 in the date-[illegible]-rate-and-tillage experiment was up about May 5. Flax sown on April 30 was up about May 10. The third seeding was made on May 10.

The varietal plat and the nursery were given a thorough disking on May 11 to clean up the weeds, which were coming up thick at that time.

The brome-grass land broken last fall to provide space for the flax nursery on clean land has required extra working to put it in suitable condition for seeding with the Columbia planter.

The flax nursery probably will be seeded tomorrow and Saturday, though it will run the risk of being blown out if we have high winds before rain comes. The recent light showers did not even leave the surface moist. We are waiting for a good rain to put the land in condition for seeding the varietal plats. Seeding in the dry dust now at the surface would be of very questionable value, judging from previous experience under similar conditions.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (May 17)

The weather of the first half of May has continued dry. There have been several days of high winds. Precipitation for this period was 0.18 inch, recorded on May 13, 14, and 15. The precipitation for the entire year has been much below average. The total rainfall from January 1 to May 15 was 1.67 inches. The normal for this period is 3.96 inches. The maximum temperature for May was 88 degrees on May 8, the minimum, 31 degrees on May 2.

Cereal crops in general look well, as there was sufficient moisture in the soil to germinate the seed. Pastures, however, are very slow in growth, due to the lack of rainfall.

The oat varieties in the field plats had emerged on May 3, and the barley on May 7.

All the material in the nursery had emerged on May 6, with the exception of a few late-seeded rows. The nursery has been trimmed and a part of it cultivated with the wheel hoe. Weeds, especially the Russian thistle, and some of the Amaranths, are bad as a result of the continued dry weather.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (May 13)

About 85 per cent of the spring seeding in the Judith Basin has been completed. While the precipitation this spring has been below normal, the soil is in good condition from the winter snowfall. Practically no high winds and no soil blowing occurred this spring until about May 1. Since that time, however, there has been a strong wind nearly every day which has interfered somewhat with experimental seedings at the Substation. In spite of the rather severe winds little damage has been done by soil blowing largely because of the good supply of moisture and the fact that winter wheat had made some growth before the winds occurred. Seeding on the cereal project, except for a late date-of-seeding, was completed on May 7.

The maximum temperatures for April were 78 and 71 degrees on the 26th and 27th. The minimum temperatures were -5 and 1 degrees on the 13th and 8th, respectively. The maximum to date in May was 85 degrees on the 7th and the minimum was 18 degrees on the 3rd. The precipitation for April was 0.79 inch as compared to the 20-year normal of 1.26 inches. No moisture has fallen so far in May.

The acreage of winter wheat in the Basin which was injured by winterkilling was small, although several fields near the Substation have been reseeded to spring grain. Apparently a small area around the Substation had less snow covering when the severe temperatures occurred. Killing on the winter-wheat varieties was rather heavy. The average survival of four plats and three single rows in the uniform winter-hardiness nursery of each variety was as follows:

	C.I.No.	Replicated plats (per cent)	Uniform winter-hardiness nursery
Minhardi	5149	--	29
Eureka x Minhardi	8036	88	29
Kanred x Minhardi	8040	88	--
Minturki x Bel. -Buffum	8033	75	6
Kanred x Minessa	8045	55	--
Minard	6690	38	4
Oro	8220	33	1
Turkey	6152	29	6
Beloglina	1543	25	1
Turkey	6250	23	1
Turkey	1558	18	--
Kanred	5146	18	T
Beloglina	1667	16	--
Kharkof	6686	13	--
Karmont	6700	10	T
Turkey	6249	10	--
Newturk	6935	10	T
Kharkof	1583	9	--
Montana No. 36	5549	8	1
Regal	7364	6	0

As indicated by the following results obtained from the rate-and-date-of-seeding experiment, wheat seeded early was injured much more than that seeded later.

Date seeded	Spring survival (Per cent) Furrow drill	Ordinary drill
July 14	0	
July 29	1	
August 12	30	24
August 26	44	41
September 9	61	5*
September 23	93	60
October 7	100	
October 21	98	
November 4	100	

*Low survival due partially to location.

This is the first year that a date-of-seeding experiment has been conducted at Moccasin since 1914. The results are the reverse of those of previous experiments, and early seeding of winter wheat, namely, August 20 to September 10, has been recommended by the Montana Agr. Expt. Station.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (May 17)

We have not had any rain since the latter part of March, except for a shower or two early in April.

We started on April 16 to prepare the station land for this year's crop. The first seeding in the date-of-seeding experiment was made on April 27, and all plats in the cultural, fertilizer, varietal, and nursery experiments, except in the date-of-seeding experiment, were sown and irrigated by May 7.

While the heavy rains late in March delayed field operations in the rice area, most of the commercial fields have been sown and submerged or irrigated.

The weather during the past week has been favorable for the germination of rice.

The rice market is rather quiet at prices ranging from $1.75 to $2.30 per hundred. It is estimated that there still is on hand in this State from 2 to 2-1/2 million bags of last year's crop.

According to the Rice Growers' Association 130,000 acres will be sown to rice in California this year, compared with more than 160,000 acres last year.

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer (April 30)

Seven field agents started on Monday, April 2, to continue the first survey of Ashtabula County. Approximately 14 per cent of the county was covered by first survey in 1927. By the end of April, 1928, 6 per cent more of the county was completed on first survey.

The weather so far this spring has been very unfavorable for survey operations, for the leafing out of barberries, and for the development of rust on barberries. Small leaves were in evidence at Columbus on April 1, but the largest leaves to be found in central Ohio on April 15 were only about the size of a dime.

A constant vigil has been kept at Columbus during the entire month of April for the purpose of detecting the first appearance of pycnia on barberries. Similar observations have been made at Dayton. However, no infection was found on barberries in April. In 1927, pycnia were found on barberries at Columbus on April 11.

An examination for barberry-eradication field agents in Ohio has been given to 38 applicants. Apparently there is an excellent opportunity to select some unusually capable men from the group. Decision on recommendation of men for appointment will be made very soon.

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, ----------

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L.W.Melander

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger (May 19)

Plans for the field season in barberry eradication are being given chief consideration in the month of May. About 18 men will be employed from June 15 to August 31.

A barberry school has been conducted since April 1 for the purpose of teaching prospective barberry scouts about stem rust and the barberry so that they will be better qualified in subject matter. The meetings are held once a week from 7:30 to 9:00 p.m. An examination is given at the end of the school, which aids in selecting the field men.

The season has been cool and dry in South Dakota, and crops and shrubbery are somewhat backward. No infection has been found to date (May 19) on barberries. This is much later than the usual date on which the first infection is found.

Educational work constituted the major activity of the barberry eradication-campaign in South Dakota during the winter and early spring. Material for the study of black stem rust and the common barberry was sent to all of the universities, colleges, normal schools, secondary schools, and to the grade schools in 50 different counties.

A special educational project was conducted through the Young Citizens League, consisting of an essay writing and speaking contest on "Black Stem Rust and the Common Barberry." The Young Citizens League is a grade-school organization that has for its purpose the training of boys and girls in better citizenship. The organization has for its motto, "Help Uncle Sam, One Another, Our School and Community."

The contest aroused considerable interest in barberry eradication. More than 6,000 boys and girls from nearly 1,000 schools took an active part in the contest; it is estimated that at least 50,000 boys and girls studied about the barberry and rust. Fifty different counties joined the contest and 46 completed their project. The project began in each local chapter of the Young Citizens League, and ended at the State convention of this body held at Pierre in the House of Representatives on April 19 and 20. Local, county, and district elimination contests were held prior to the State meeting.

Farm organizations, elevator companies, machinery companies, chambers of commerce, chapters of the American Legion, bankers, and other organizations cooperated in furnishing the prize money for the various contests, which amounted to more than $800.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue (May 8)

During the first three months of 1928, materials, including lesson plans, literature, specimens, loss statements, sets of slides, display cards, etc., were placed in all of the schools in 17 counties comprising more than one-third of the schools in the State. Talks and demonstrations were made in the grade and high schools and at local district and State meetings of various farm, business, and teachers' organizations.

Two radio talks were made from WDAY at Fargo,--one by the State Leader on January 27, and the other by Dr. C. R. Ball on March 28.

Applicants desiring appointments to the North Dakota barberry-eradication force have been attending regular classes every Tuesday and Thursday evening from March 13 to May 8. The purpose of this class is to train and instruct the field agents in order that they may be well prepared to make favorable contacts and state without hesitancy evidences favoring barberry eradication. Within a few days the personnel will be selected. More than half of the field agents selected for this season's work have had one or more years satisfactory experience in barberry eradication. A group conference for all field agents will be held at the State College on June 30. The men will be ready to leave headquarters for their respective field stations by 10 A.M. on July 1.

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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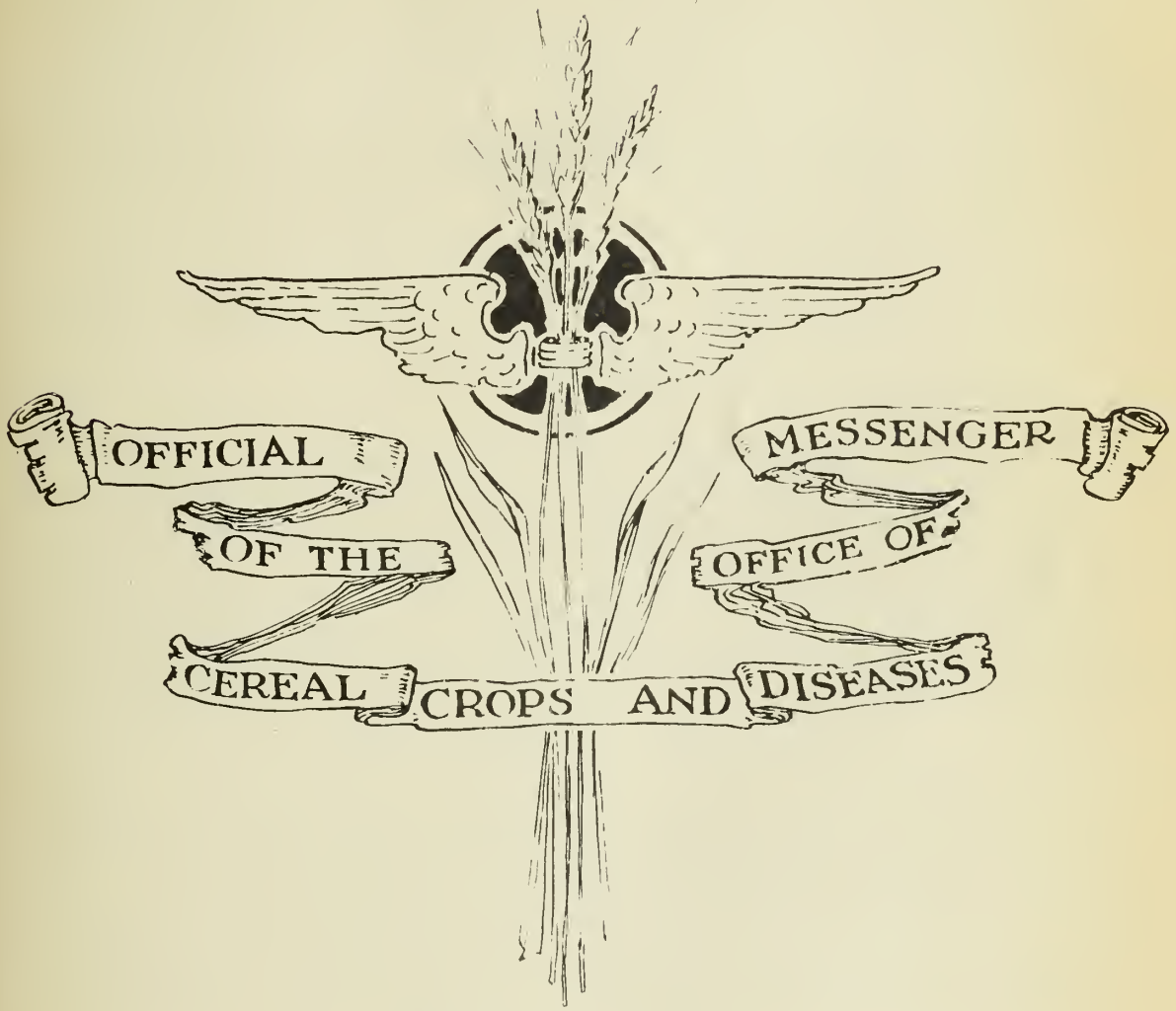

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UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 12

May 31, 1928
Personnel (May 21-31) and Project Issue

PERSONNEL ITEMS

Dr. C. R. Ball, senior agronomist in charge, returned on May 23 from a visit to the D. R. Coker Pedigreed Seed Company at Hartsville, S. C. A survey was made of the cereal breeding plats in company with about 50 County Agents from South Carolina, North Carolina, and Georgia. The party was directed by Mr. D. R. Coker, and his associates. Some interesting hybrids and selections of wheat, oats, and rye were seen. The most important breeding operations are being conducted with oats, the principal object being a smut-resistant and winter-hardy oat. It was Dr. Ball's expectation to be shown over the plant-breeding nurseries more fully in the afternoon, but owing to the steady downpour this was not possible.

Dr. Ball left Washington on May 31 for a three weeks' trip in Minnesota, North Dakota, and Wisconsin to confer with State Leaders and others regarding barberry eradication and to study the barberry-eradication problems in the field. He also will address the annual convention of the North Dakota State Retail Merchants Association at Minot, N. Dak., on June 6, on the subject of "The Merchants and Agriculture." On the afternoon of June 7, Dr. Ball will address a joint meeting of farmers and business men called by the Chamber of Commerce. His subject will be "Control of Cereal Diseases!"

J. Allen Clark, agronomist in charge of western wheat investigations, left Washington on May 29 to visit field stations in Kansas, California, Oregon, Washington, and Idaho. He will inspect cooperative cereal experiments, particularly with wheat, study wheat varieties and hybrids in breeding nurseries, and observe wheat conditions in general.

F. A. Coffman, associate agronomist in oat investigations, left Washington on May 27 for an extended trip in the interests of oat investigations which will take him as far west as the Pacific Coast. He will take notes on cooperative oat nurseries and collect plant material for later study.

In June, Mr. Coffman will visit State and Federal experiment stations in Missouri, Kansas, Texas, Arizona, California, Oregon, and Washington, returning to Ames, Iowa, through Montana, Wyoming, and Nebraska, about July 1. After assisting with the harvest of the oat nursery at Ames, Mr. Coffman will go west again through Minnesota, North Dakota, and Montana, arriving at Aberdeen, Idaho, about the last week in July. On completing the studies and observations at Aberdeen he will return to Washington the latter part of August.

J. M. Hammerly, senior scientific aid in corn investigations, left Washington on May 27 for Florence, S. C., to take notes on and thin the stands of corn in the plats of the cooperative experiment on the Pee Dee Substation. Upon his return on May 29, Mr. Hammerly reported that the corn is in a very satisfactory condition. In general, corn is only fairly good because of the poor condition of the ground for cultivating.

The weather this spring has been very unfavorable for cotton. Cotton is at least three weeks late. A great deal of it is only just coming through the ground. Some planters are fearful of a boll weevil attack on account of the lateness of the crop. Tobacco and sweet potatoes are looking fine.

H. Millard Joslin, junior chemist, who since August, 1926, has been engaged in making analyses of wheat samples to determine the quantity of protein and other constituents, in cooperation with the Bureau of Chemistry, resigned his position on May 31 to accept a position in the U. S. Patent Office.

John R. Hooker, scientific aid, who has been in the Washington Office since September 29, 1921, resigned his position on May 31 to engage in the practice of law in Ohio.

K. S. Quisenberry, associate agronomist in western wheat investigations, left Washington on May 28 to visit field stations in Kansas, California, Oregon, Utah, Idaho, Wyoming, Colorado, and Nebraska to inspect cooperative cereal experiments, particularly with wheat, to study wheat varieties and hybrids in breeding nurseries, and to observe wheat conditions in general.

G. F. Sprague, junior agronomist in charge of cooperative cereal experiments at the North Platte Substation, North Platte, Nebr., who has been on leave without pay since September 20, 1926, engaged in graduate study at Cornell University, returned to his former duties at North Platte on May 22, 1928, having completed his graduate course.

Dr. V. F. Tapke, associate pathologist in cereal-smut investigations, left Washington on May 31 for Moro, Oreg., to spend some time at the Sherman County Branch Station in making environmental and other studies on the life history, distribution, and control of the smuts of small grains. Later Dr. Tapke will proceed to Aberdeen, Idaho, to make similar studies at the Aberdeen Substation. Dr. Tapke will return to Washington about the middle of July.

G. A. Wiebe, assistant agronomist in charge of the cooperative cereal experiments at the Aberdeen Substation, Aberdeen, Idaho, has been authorized to visit points in California to study barley varieties under cultivation and collect samples for laboratory study.

VISITORS

Dr. Wm. Alanson Bryan, Director of the Los Angeles Museum, and a college classmate of Dr. C. R. Ball, was an Office visitor on May 21. Dr. Bryan is interested in developing the agricultural and school service phases of museums.

Dr. F. E. Kempton, formerly pathologist in charge of barberry eradication, was a recent Office visitor.

MANUSCRIPTS AND PUBLICATIONS

25 A manuscript entitled "The Prevalence of Mixtures in Marquis Wheat Grown in Central Montana," by K. S. Quisenberry, J. A. Clark, and B. B. Bayles was approved on May 24 for publication in the Journal of the American Society of Agronomy.

26 A manuscript entitled "The Intensive Production of Single Crosses between Selfed Lines of Corn for Double Crossing," by F. D. Richey, was approved on May 26 for publication in the Journal of the American Society of Agronomy.

Galley proof of article entitled "Differences in Resistance to Bacterial Wilt in Inbred Strains and Crosses of Dent Corn," by C. S. Reddy and J. R. Holbert, for publication in the Journal of Agricultural Research, was read on May 31.

Important Notice to Field Employees

Transportation Requests: Attention is again called to the necessity for using transportation requests in the order issued, that is, all old requests should be used before beginning on the new books.

Award of the Emil Christian Hansen Prize to Dr. E. C. Stakman

In announcing the award of the Emil Christian Hansen prize to Dr. E. C. Stakman, an error was made in Science, from which the item was copied into the Cereal Courier of May 20, in stating that the prize was handed to the American chargé d'affaires at the legation in Stockholm. Instead, the medal and prize were delivered on May 8, with appropriate ceremonies, at the American Legation at Copenhagen, for transmission to Dr. Stakman.

Pursuant to the last will and testament of the late Professor Emil Christian Hansen and his wife, of Copenhagen, Denmark, a Fund bearing his name has been established, the Statutes of which have been ratified by the Government of Denmark under the date of June 17, 1911.

At proper intervals, as a rule every two or three years, beginning in the year 1914, a Gold Medal bearing his effigy and accompanied by a sum of 2,000 Kroner has been awarded on the donor's birthday, the 8th of May, to the author of a distinguished publication on some microbiological subject that has appeared of late years in Denmark or elsewhere.

The person to whom the medal is assigned is designated by a committee composed of the Trustees of the Fund together with at least two foreign microbiologists who at the request of the said trustees have declared themselves willing to enter into the Committee.

The medal was awarded in 1914 to Professor Dr. Jules Bordet, Brussels, for researches in medical microbiology, in 1922 to Professor Dr. M. W. Bojerinck, Delft, for researches on general microbiology, in 1923 to Dr. E. I. Allen, Plymouth, for researches in marine microbiology.

On May 8, 1928, the Emil Christian Hansen Medal and Prize was awarded to Dr. E. C. Stakman, Professor of Plant Pathology in the College of Agriculture, Forestry, and Home Economics of the University of Minnesota, in appreciation of the pioneer work accomplished by him in developing new ideas and methods for investigating the rust problem, methods applicable not only to the study of the wheat rusts but to the investigation of diseases due to the fungous parasites in general.

Dr. E. M. Freeman, Chief of the Division of Plant Pathology and Botany, University of Minnesota, writes under date of May 22, 1928, that announcement of the award was made to the University public in connection with the Cap and Gown Day exercises at the University convocation on May 10. Dr. Freeman gives the following facts regarding Dr. Stakman's accomplishments:

Dr. Stakman is one of our most outstanding men in scholarship, in research work, in teaching, and in outside contacts such as extension. He is known throughout the world in the field of plant pathology as probably the greatest living scholar of the rust diseases of cereal plants, and, in general, as one of the outstanding scholars in the general field of cereal diseases. He has been president of the American Phytopathological Society and for some years editor of the official journal, "Phytopathology." He is a member of the American Phytopathological Society, American Genetics Society, Society for Experimental Biology and Medicine, Society of American Naturalists, Botanical Society of America, Sigma Xi, Phi Beta Kappa, and other societies of lesser importance. He has been honored by election to the following: American Academy of Arts and Science, Cambridge, Massachusetts; Kaiserliche Akadamie der Naturforscher zu Halle, Germany; British Mycological Society, London; corresponding member, Der Vereinigung für Angewandte Botanik of Germany; life honarary member of the Sidney University Agricultural Society of Australia; control member of Botanical Abstracts. International Education Board fellows and other fellows and scholars from many foreign countries have studied in his laboratories. They have come from Sweden, Australia, Holland, China, Hungary, South Africa, many from Canada, and from 19 States of the United States. His graduates practically compose the rust research laboratories of the Canadian government. Without Dr. Stakman's remarkable ability to present to large audiences of influential business men, to legislators in various States, and to large conventions, such programs as the barberry eradication and rust investigations, it would have been impossible to win the support of such organizations. He has been sought as a Sigma Xi and general lecturer on scientific subjects in many States.

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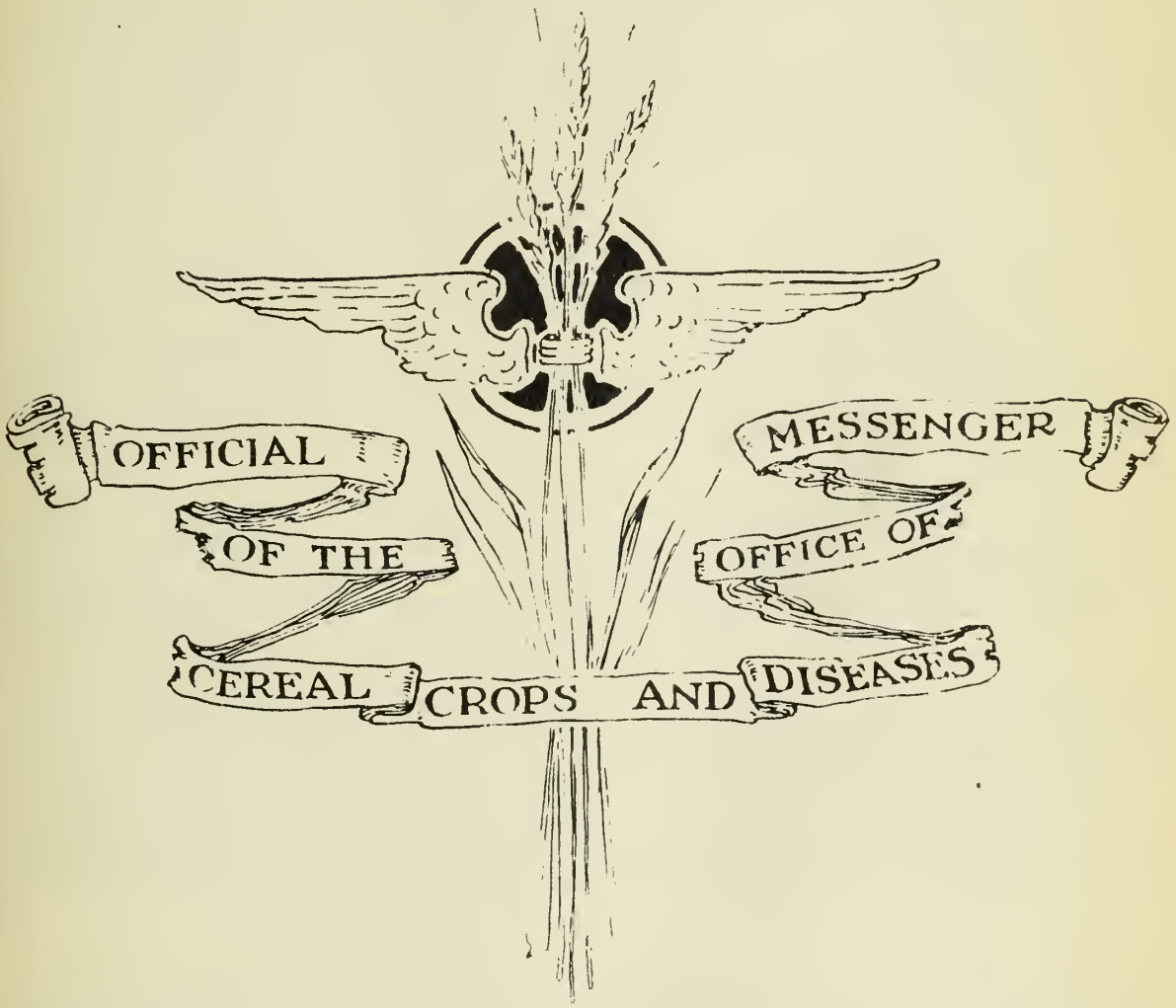

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 13

June 10, 1928
Personnel (June 1-10) and Field Station (May 16-31) Issue

PERSONNEL ITEMS

Ralph M. Caldwell was appointed agent, effective May 16, in barberry-eradication in Wisconsin. He becomes State Leader to succeed W. A. Walker, whose resignation became effective on March 24. Mr. Caldwell's headquarters are at Madison, Wis.

G. C. Curran, associate pathologist in barberry eradication, will leave Washington on June 12 for points in Maryland, Pennsylvania, and New York, to take notes on aecial infection on common barberry bushes, to study the location and distribution of common barberries, and to examine grain fields for black stem rust. Mr. Curran will be gone about two weeks.

Dr. H. B. Humphrey, senior pathologist in charge of cereal-rust investigations, left Washington on June 2. He will proceed in an unofficial status to the West Coast, and on June 18 will begin official travel at Puyallup, Wash., visiting agricultural experiment stations in Washington, Oregon, Idaho, and Wyoming during the present fiscal year. He will confer with officials of the experiment stations and members of the Office research staff engaged in cereal-rust investigations. He also will collect cereal-disease material for later study.

Miss Anne E. Kimball was appointed clerk-stenographer, effective June 1, to assist in the office of the State Leader of barberry eradication in Colorado. Miss Kimball takes the place of Miss Katherine Abbott, who resigned her position on May 31.

R. W. Leukel, associate pathologist in charge of nematode investigations, spent June 7 at Wilmington, Del., in an inspection of experiments for the control of covered smut of barley, loose smut of barley, stripe disease of barley, and bunt of wheat carried on by the E. I. DuPont de Nemours & Company, Inc., under the direction of Dr. W. H. Tisdale. Mr. Leukel also examined experiments in the greenhouse and laboratory and conferred with Drs. Englemann and Tisdale and others about the future of seed-treatment work.

Dr. J. H. Martin, associate agronomist in charge of grain sorghum and broomcorn investigations, left Washington on June 5 for Athens and Macon, Ga., to study the operation of combine harvesters in the southeastern States.

H. H. McKinney, pathologist in charge of cereal-virus-disease investigations, left Washington on June 10 for Baton Rouge, La., where he will confer with officials of the agricultural experiment station and inspect experiments with corn mosaic. He also will take notes on the general occurrence of corn mosaic. Mr. McKinney will return to Washington about the latter part of June.

VISITORS

H. H. Gardner and H. L. Garrad, of Indiana and Ohio, respectively, were visitors in the Office on June 9. Mr. Gardner, who was formerly an agent of this Office in the cooperative cereal-disease investigations at La Fayette, Ind., is a field demonstrator for the Potash Importing Corporation of New York, being located at La Fayette; and Mr. Garrad represents the same Corporation at Mansfield, Ohio.

Dr. V. A. Pesola, who is connected with the Central Experiment Station at Tikkurila, Finland, and who has spent the past year in the United States on an International Education Board Fellowship, was an Office visitor on May 24. Dr. Pesola is now on his way back to Finland. He is especially interested in developing, by means of breeding, disease-resistant strains of wheat and rye suitable for growing in Finland.

Prof. Nickolas Schmitz, extension agronomist of the Pennsylvania State College, was an Office visitor on June 8.

MANUSCRIPTS AND PUBLICATIONS

27 A manuscript entitled "Seed Coat Structure and the Inheritance of Seed Color in Sorghums," by Arthur F. Swanson, was submitted on June 8 for publication in the Journal of Agricultural Research.

28 A manuscript entitled "Yellow-Kerneled Fatuoids," by T. R. Stanton and F. A. Coffman, was approved on June 9 for publication in the Journal of Heredity.

29 A manuscript entitled "Some Chemical and Morphological Phenomena Attending Infection of the Wheat Plant by Ophiobolus graminis Sacc.," by Hurley Fellows, was submitted on June 9 for publication in the Journal of Agricultural Research.

Farmers' Bulletin 1565 entitled "Shall I Buy A Combine?" by L. A. Reynoldson, of the Bureau of Agricultural Economics, J. H. Martin, of the Office of Cereal Crops and Diseases, Bureau of Plant Industry, and W. R. Humphries, of the Bureau of Public Roads, was received June 1, bearing date of April, 1928. (18 pp., 6 figs.)

Articles by nine members of the scientific staff of the Office appear in the U. S. Department of Agriculture Yearbook for 1927. They are listed below:

Wheat-Scab Control Effected by Cleaning up Refuse of Crops, by James G. Dickson.

Cornstalk Testing by Chemicals Indicates Food Needs of Plant, by George N. Hoffer.

Corn Seed Treatment of Dent Varieties in Commercial Practice, by J. R. Holbert.

Barberry Eradication Reducing Stem Rust Losses in Wide Area, by Lynn D. Hutton.

Rice Yield Increased in California by Ammonium Sulphate, by Jenkin W. Jones.

Sorghum Grain Can Be Harvested With An Adjustable Combine, by J. H. Martin.

Flax Resistant to Wilt and Sown Early Helps to Cut Losses, by E. C. Stakman.

Oats of New and Improved Sorts May Now Be Registered, by T. R. Stanton.

Wheat Stinking-Smut Control by Copper Carbonate Method, by V. F. Tapke.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs) [June 1]

Fulghum oats and early varieties of barley are being harvested. Fulghum oats seeded on October 1 and 15 had a fair stand to come through the winter, but all later seedings were completely winterkilled.

Spring-sown oats are making a good growth and will give fair yields because of the cold spring with plenty of rain. Winter wheat and rye are in excellent condition and good yields will be made.

A field of 75 acres of wheat sown in January was examined on May 30. It promises an average yield of at least 15 bushels per acre.

A demonstration of a combine will be made on a 250-acre wheat field in Monroe County, on June 7. This is the first demonstration of the kind to be held in Georgia.

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (June 9)

The cool, wet spring has been favorable to the vegetative growth of the fall-sown cereals. The condition of winter oats undoubtedly has been greatly benefited, and excellent yields are in prospect. Winter wheat is too tall, however, and lodging is expected. Some varieties are approximately six feet high.

Leaf rust of wheat is common though considerably below average in amount of infection for the stage of maturity of the crop. There is more loose smut of wheat than usual, especially in the Fulcaster strains. A heavy infection of both covered and loose smuts of barley is present in certain winter-barley varieties sown with untreated seed. The varieties sown with Semesan-treated seed show only a trace of loose smut; however, more loose smut is present in the treated plots than in past years.

There was much natural crossing in many wheat varieties in 1927, as the No. 3+ awn type is especially frequent in several fully awned varieties. However, natural crossing between wheat and rye seems to have occurred but infrequently in 1927.

In spite of the lack of sunshine and the frequent rains, the stage of maturity of the fall-sown grains is about average, as barley will be ready for harvest by June 11.

The rainfall for April and May, in comparison with the monthly mean for the years from 1912 to 1927, inclusive, is as follows:

1928	Inches	1912-1927 Av. (Inches)
April	4.77	3.60
May	3.87	3.42

The number of rains in April, 1928, was 10 and in May, 13.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins) (June 4)

Unfavorable weather for the germination of rice seeded in April resulted in poor stands and in very weedy fields. The excessively dry weather in May made it necessary to irrigate nearly all fields seeded in late April and in May. It also was necessary to irrigate most fields twice to obtain germination and complete emergence of the seedlings. In most instances excellent stands resulted.

From April 14 to May 20, inclusive, only 0.39 inch of rain fell. During much of this time winds were high and from the north and dried out the soil as deeply as it has been prepared. Even where the soil was loose there was not enough moisture left in it to cause the germination of seed, in spite of the fact that the soil was moist at seeding time.

The rice plots on the Station were seeded during the first two weeks of May. Very little germination took place until after the plots were irrigated. The stands are excellent in nearly all of the plots; but those plots that have been seeded to rice continuously for several years are very grassy. However, the plots in the rotation experiment that include soybeans are free of weeds.

The seeding of soybeans was completed on May 26. Some of the earlier seedings are up to a good stand.

All station buildings have been painted. The laboratory and residence were given two coats of creosote and paint and the other buildings two coats of paint.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett) (June 1)

Our early sown oats are beginning to joint and it looks as if they might not be far behind the normal date in maturing. Winter wheat will start to head within the next week. There has been much winterkilling in the winter-wheat varieties, and I believe that we should be able to discard at least 25 per cent of the selections on this season's results.

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins) (June 1)

This has been an exceptionally dry season here at Ames. So far this spring we have had but one good rain. Luckily that came just after most of our corn had been planted so that it came up quickly. Late plantings are showing the effect of dry weather in their slow emergence, but early plantings are up in good shape, most of them having had their first cultivation.

The plantings this year for the making of hand pollinations include:

Inbred lines for selfing	2,136	rows
New lines from other stations	94	"
Inbred lines for making F_1 crosses	273	"
Progenies for genetic studies	261	"
Total	2,764	"

This season the third yield comparison of F_1 hybrids, double crosses, and varieties is being conducted. In these experiments the compared material has been divided into seven groups as follows:-

Group	Number of kinds compared
White corn	76
Earliest Yellow Corn	68
Second " "	91
Third " "	92
Latest " "	80
Prof. Burnett's Iodent Ear Crosses	58
Crosses tested in previous years and being re-tested in larger plots	40
Total	505

This year for the first time we are planting some preliminary corn-borer experiments. These experiments were arranged for by Mr. Richey who was in Ames the first four days of May. They include a rate-and-date-of-planting experiment with five commercial varieties ranging from early to late, a date of planting experiment with F_1 crosses, and a comparison of the level, furrow, and listed methods of planting.

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert) (June 2)

The Rotary hoe is becoming increasingly popular as an implement for cultivating small corn and soy beans. In many cases two 10-foot hoes have been hitched behind a small tractor. With such an arrangement one man can cultivate from 60 to 80 acres of corn or soy beans a day.

There is a greatly increased soy-bean acreage this year. One of the important factors contributing to this increase in acreage is the minimum-price guarantee for No. 2 beans next fall. They are also being used extensively as a hay crop.

Dr. E. E. DeTurk and Dr. E. G. Sieveking from the University of Illinois were with us on June 1, inspecting cooperative field experiments at Bloomington.

The continued low temperature has caused a retardation in the growth of corn in some localities. Some strains and some fields of corn do not appear to be adversely affected by the unfavorably cold weather that has prevailed during the past several days.

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer) (June 1)

Unusually fine weather conditions for the corn work prevailed during the month of May. Plantings were begun on May 7 and continued during the entire month under most favorable conditions. The weather of the past week has been somewhat cool, and the plants have not made the progress which warm weather might have permitted.

The stands of corn in all the experiment plots are very good. No seedling blight has been found in any of the fields which have been inspected to date. This applies, also to many fields of open-pollinated strains. However, cut worms and wire worms are causing some damage at the present time.

The experimental corn plots are located at La Fayette, Vincennes, Bedford, Farmland, Wanatah, Culver and Scottsburg. We are cooperating with the Soils and Crops Department in studying the responses of corn on the fertility plots at a number of these places.

The breeding experiments are being conducted on the Soils and Crops experimental farm at La Fayette, and the farms of the Horticultural Department. In addition, we are using three additional plots in the vicinity of La Fayette for detasseling experiments.

The hybrid strains of corn which have been tested during the past few years have been sent out in larger quantities this year. We have over 600 corn growers in Indiana cooperating with us in these experiments, the chief purpose of which is to determine the range of adaptation of these strains to conditions in various parts of the state.

We were glad to have Mr. F. D. Richey visit us in May.

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, H. S. Jackson and E. E. Mains) (June 1)

The cereal nurseries for rust investigations have all been seeded. A nursery of 868 rod rows of spring wheats and barleys sown on March 22 is in very good condition. A few varieties of barley are beginning to head. The winter wheats came through the winter in very poor condition. In a nursery containing 2,778 rod rows, 1,883 rows were completely winterkilled. Of those which survived the best stand was only 50 per cent. The following are the estimated average survivals for replicated varieties and selections.

Variety	Survival Per cent	Variety	Survival Per cent
Michigan Amber Check	1	L2018A3-15-1-1	6
Barletta 24 C.I. 5999	0	L2018A3-15-1-2	7
Fulhard C. I. 8259	0	L2018A3-53-2-1	8
Fultz Brown 1-1-1	T	L2018A3-53-4-1	7
Fultz Brown 1-1-2	T	W2018A11-37-11	1
Fultz Brown M1-2	T	W2023A2-22-16	0
Fultz White 1-1-1	1	Grandprize 436-5	1
Fultz White 1-1-2	0	L2026A1-13-2-1	8
Fultz White M1-2	0	L2026A1-60-2-1	6
Hybrid 2c, 1-5-1 B2	3	Gladden 455-1	T
Hybrid 2c, 1-5-1 M12	9	L2032A2-105-1-2	5
Kanmarq C. I. 6937	5	W203211-24	2
Kanred P762-1	21	W2032A11-25-30	3
Kanred x Fulcaster 30-1-3-394-1	15	W2032A11-88-3	1
Kawvale C. I. 8180	6	W2032A11-88-21	1
Michigan Amber 29-1-1-1	1	Gypsy 457-2	T
Michigan Amber B45-1	2	L2036A2-61-2-2	8
Michigan Amber M3	T	L2036A2-89-4-3	9
Michigan Amber M7	T	L2036A2-89-4-4	9
Michikoff	7	L2036A2-89-5-3	8
Nittany	T	W2036A3-12-2	T
Purkoff	13	W2037A4-41-15	2
Sel. A4 Purdue 2M	T	L2052A4-63-1-5	4
Sel. 21-2-11	2	L2055A1-5-2-1	1
Tenmarq C. I. 6936	1	L2055A1-18-2-4	3

Variety	Survival Per cent	Variety	Survival Per cent
Malakoff 4898-4	28	L211D1-68-W1-W1	1
Texas Sel. 3015-14	T	L211D1-68-W1-W6	1
Texas Sel. 3015-28	T	L211D1-68-W1-W8	3
Texas Sel. 3015-63	1	L2120-3-2-3	5
Texas Sel. 3015-84	0	L2120-8-3-2	3
Texas Sel. 3015-106	1	L2120-16-1-1	4
W203A1-44	1	L2120-39-2-2	16
Prelude 352-2	0	L2120-39-5-1	17
L206A1-74-8	6	L2120-62-1-3	15
Red Rock 402-1	T	L2120-62-2-1	8
W2010A5-88-25	T	L2151A1-49-2-2	3
L2010A7-4-1-1	T	L222-4-1-1	T
L2010A7-4-3-1	3	L222-4-24-1	T
L2010A7-73-1-1	5	L222-4-30-1	T
L2010A7-73-1-3	5	L222-4-30-3	0
Valley 471-1	T	L222-4-54-2	0

Rain at planting time last fall resulted in late seeding so that all varieties were at a decided disadvantage.

Up to the present time very little leaf rust has developed outside of the inoculated plots. The severe winterkilling has resulted in a marked decrease in the overwintering of leaf rust. Rust in the inoculated plots is spreading slowly, the cool weather of the past week having checked the development.

A nursery of 386 rows of corn was planted on May 10. This includes 142 F_1 of crosses between resistant and susceptible lines of corn which will be selfed and back-crossed to furnish F_2 material for greenhouse studies on the inheritance of resistance. The remainder of the nursery consists of 159 rows of inbreds, resistant lines and various types for use in crossing with resistant lines, and 85 rows to furnish F_3 material. Plants infected with physiologic Form 4 have been transplanted to the nursery in order that data may be obtained concerning the field reaction of the various lines.

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, O. S. Aamodt)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (June 2)

Winter wheat has steadily improved since the rains in April. While no bumper crop is expected because of poor stand, yet the indications are for an average or above average crop.

On May 25 Mr. C. O. Johnston of Manhattan, Kans., visited the Station and checked up the rust in the nursery. A number of wheat fields within a radius of 10 miles of Woodward also were inspected for leaf rust.

The first seeding in the date-of-seeding experiment with broomcorn and grain sorghums was made on May 26 and emerged by the 31st. Twenty-five varieties of grain sorghums and five varieties of broomcorn were seeded in duplicate 4-row plats. Two more seedings of the same varieties are to be made in this experiment.

Maximum temperature for the period: 100° on May 31st, minimum 46° on the 23rd. P recipitation for last half of May, 2.59 inches, or a total of 6.69 inches for May. Last year the precipitation for May was only 0.52 inch.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson) (June 1)

The weather in May was for the most part very favorable for outdoor work.

The corn plots were planted under unusually favorable conditions, planting at Manhattan being completed, except for late dates of planting, on May 2. For the most part a good stand was obtained. Thinning is now completed and the corn has been cultivated once. More than ordinary trouble is being experienced from weeds, due largely to the cold dry weather in April which did not permit their normal germination and removal before the crop was planted.

The writer planted the nursery at the Colby susstation May 21.

The rainfall for the month was 2.21 inches, as compared with a normal of 4.48 inches. The total rainfall for March, April, and May was 5.04 inches, as compared with a normal of 8.64 inches for the spring months. P astures and alfalfa are beginning to need a soaking rain badly. The mean temperature for May was 65.5° as compared to a normal of 64.6°. A maximum of 95° occurred on May 30 and a minimum of 40° on May 22.

Visitors for the month included Mr. F. D. Richey, agronomist in charge of corn investigations, on May 8 and 9; Mr. W. T. Craig, agent in cereal breeding at Cornell University, on May 24 and 25; Mr. J. A. Clark, agronomist in charge, and K. S. Quisenberry, associate agronomist in western wheat investigations, and Mr. F. A. Coffman, associate agronomist in oat investigations, on May 31 and June 1.

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (May 31)

I left Manhattan on May 17, and proceeded to College Station, Tex. There I conferred with Dr. P. C. Mangelsdorf on matters relating to breeding of leaf-rust-resistant wheat for Texas. Leaf-rust notes were taken on uniform winter and spring wheat nurseries at that station. There was very little leaf rust on winter wheat but a very heavy infection on the spring wheat.

Leaf rust appeared early at College Station on the winter wheats but nearly disappeared during April. This raises the question as to where leaf rust of wheat in that section comes from. Hardly any wheat is grown in southeastern Texas, yet a very heavy infection occurred on spring wheats in that area. There was a heavy infection of stem rust on winter wheats at College Station but practically none on spring wheats. In fact, I saw only one or two stray uredinia in the spring-wheat nursery, while a great deal of stem rust was present in the winter-wheat nursery.

On May 20, Dr. Mangelsdorf and I went to Texas Substation No. 6, at Denton, in northern Texas, and spent two days taking leaf-rust notes on nursery seedings. Here we found a very heavy infection of leaf rust on both winter and spring wheats but only a trace of stem rust on wheat. No stem rust was observed on oats or barley and only a trace of crown rust could be found at Denton. A heavy infection of crown rust and considerable stem rust of oats occurred at College Station.

On May 23, I proceeded to Stillwater, Okla., where I took leaf-rust notes on uniform leaf-rust nurseries. A heavy infection of leaf rust is present at Stillwater again this year. This makes three straight seasons in which wheat in that vicinity has been heavily attacked by leaf rust. Apparently that rust is an annual occurrence in that area. I did not observe any stem rust on wheat or oats at Stillwater, and only a trace of crown rust was present. Leaf rust overwintered in abundance at Denton and apparently to some extent at Stillwater. Wheat in nursery and field plot sowings at Stillwater looked very fine and should make an excellent crop.

From Stillwater, I went to Woodward, where rust notes were taken on varieties and hybrids of wheat in a winter-wheat nursery. This nursery was sown late and only a few plants of each selection survived the winter. Only a small amount of leaf rust was present at that station. Wheat in fields in the vicinity of Woodward which were sown early looks well, but I was able to find only a small amount of leaf rust and no stem rust on it.

I next visited a large nursery at Harper in southern Kansas. At that station, we are testing many selections and hybrids of winter wheat in addition to the regular uniform set of varieties and hybrids. The nursery is on land owned by the high school and is looked after by Mr. Dwight Patton, vocational agricultural instructor. The wheat in the nursery had made a fairly good growth but was not as good as that in fields in that locality. There was very little leaf rust either in the nursery or in field sowings. I visited many fine fields in that vicinity and near surrounding towns but found little leaf rust and no stem rust.

In general, there is not nearly so much leaf rust on wheat in the southwestern Great Plains as there was last year. There is considerable leaf rust in north central Texas and central Oklahoma, a small amount in western Oklahoma and southern Kansas, and practically none in northern Kansas, at the present time.

Wheat looks very fine in north central Texas, central Oklahoma, and in most of Kansas. The crop was severely injured in the western parts of Texas, Oklahoma, and Kansas by drought and some acreage has been abandoned. In general, however, a bumper crop is in prospect for Texas, Oklahoma, and Kansas.

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (June 4)

Beginning on June 2 and lasting until 4 p. m. on June 4 the rainfall at this Station measured 3.19 inches. The rainfall was timely but possibly of too great a volume, since lodging has taken place wherever wheat growth was heavy. The prospects for a wheat crop are good without further rainfall.

Row crops are in excellent condition with the exception of tender sorghum plants just emerging because of soil washing.

In the regular varietal test all sorghums will be planted on three different dates. The first dates of planting have been completed. In the sorghum nursery the selections will be planted on two dates. The first date of planting has been completed. The immediate task as soon as weather conditions permit will be the thinning of the sorghums that have emerged to a uniform stand.

June 14 has been designated as "Wheat Growers Day." It is expected that a number of farmers, county agents, and vocational teachers will be at the Station at that time.

J. A. Clark and K. S. Quisenberry were official visitors at the Station June 2. Mr. Ali Nouman, a representative of the Turkish government is making a six weeks' study of dry-land farming at the Hays Station. Max Crannel and Morris Halperin have been selected to assist with the work on the Cereal Project. Both men are graduates of the Kansas State Agricultural College.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague) (June 2)

The weather for the last half of May has been favorable for crop growth.

Winter wheat is heading and gives promise of a fair yield. The spring-grain nursery looks very well. Barleys are just coming into head and look better, at this time, than in any previous year.

Corn has emerged with good stands. Thinning will begin next week. Sorghum varieties were sown on May 31. This finished the seeding on the Cereal project.

The total precipitation for the last half of May was only 0.71 inch. However, nothing is as yet suffering from drought. The maximum temperature for this period was 89 degrees on May 31; the minimum was 37 degrees on May 21.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle) (May 29)

Comparatively high temperatures have prevailed during May at Fargo. There has been no precipitation of practical value.

Plat and nursery seedings made on May 14 and 15 are very irregular in their emergence, in spite of precautions taken when sowing the seed. Due to lack of any good showers and to drying weather conditions, these seedings have made practically no development during the past ten days.

The Flax Wilt and Rust Nursery, sown on May 19, has not emerged. At the time of seeding there seemed to be sufficient moisture in the soil at the depth of seeding, but the drought which has prevailed since did not allow the seed to germinate.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (June 1)

During the month of May there was an abundance of sunshine, high temperatures, and low precipitation.

The warm weather and high percentage of sunny days have resulted in a rapid growth of all crops. The spring cereal varieties in plats are about 8 inches high, and the winter rye is heading, although the latter made but little growth last fall.

The seeding of cereal experiments is completed except the date-of-seeding experiments. The nursery has been cultivated and the plats trimmed. The missing hills in the corn varieties have been re-planted. The corn nursery has emerged and is considerably earlier than last year.

Crops are not suffering for lack of rain, but more moisture will be needed soon to insure a good crop.

The mean temperature for the month of May was more than 5 degrees above normal and about 10 degrees above that of May, 1927. The rainfall for the month was 1.22 inches, which is about half the average rainfall for May at this station. The maximum temperature was 93 degrees on May 8. Although the minimum temperature was 32 degrees last night there has been no killing frost since the first week in May, when a minimum of 25 degrees was recorded.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (June 2)

Flax sown on May 10 in the date-and-rate-of-seeding-and-tillage experiment was up about May 19, but stands were somewhat irregular as a result of the drought. Some of the flax sown on May 21 was up about May 29, but most of it is not yet up. The fifth seeding was made on May 31.

The flax nursery seedings were made during the period from May 19 to May 26, inclusive. Seeding early or late made no apparent difference, as there was not enough moisture near the surface to germinate seed sown with the nursery seeder.

Seeding of the flax varietal plots, postponed on account of the drought, was made on May 31 and June 1, as soon as possible after the rain of May 30. The rainfall was hardly adequate to insure perfect germination of seed, but conditions were more favorable for seeding than at any other time during May.

Dry weather has continued through the last half of May. The rainfall during the last half of May was only 0.37 inch, of which 0.26 occurred on the night of May 30. Not over 0.1 inch fell in any other 24-hour period during the entire month. The total precipitation for May was only 0.55 inch. The average May rainfall for the previous 14 years was 2.55 inches.

No freezing temperatures were recorded during the last half of May. Maximum temperature was 95° on May 23; minimum, 34° on May 26 and 27.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (June 2)

All cereal varieties in the plots and nursery are making good vegetative growth, in spite of the continued dry weather. Hay and pasture grasses on the uplands are very short.

Stands in some of the later-seeded cereal crop fields are poor, because of insufficient moisture in the ground to germinate the seed.

Some damage to cereal crops by cut worms has been reported in this area.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (May 31)

Many fields of winter wheat began to show a yellow condition of the leaves about May 10. Early-seeded fields are most affected. Late-seeded fields show little or none of the condition. The leaves did not wilt as when suffering from drought alone but turned yellow and died. Badly affected plants were stunted and usually have not recovered, while plants on which only the lower leaves were affected apparently are recovering and gaining their normal color. An examination of the fields failed to show any damage from insects. A check of the weather records showed that a temperature of -5° occurred on April 13 after the winter wheat had made some growth. While the plants did not immediately show any serious injury, they apparently were weakened and when a period of drought followed, the yellow condition of the leaves appeared. The surface soil was dry and somewhat retarded the growth of new roots. A close watch of the plants has shown that they begin to recover at about the time that the new roots sent out from the crown reach the moist soil. During the past two weeks many requests have come from farmers and county agents to examine fields in all parts of the Basin. At a recent meeting one farmer reported that a similar condition of the plants appeared in 1906 in early-seeded wheat. Temperature records are not available for that period, but precipitation records show only 0.16 inch for April, 1906.

Winter rye on the substation is heading out very short, and winter wheat which is coming into the boot is only about 15 inches high. With rain in the near future, however, the wheat still will make considerable growth.

The precipitation by months since Jan. 1 has been as follows:

Year	Jan.	Feb.	March	April	May	Total
			[Inches]			
1928	0.68	0.38	0.23	0.79	0.53	2.61
Average for 20 years	.68	.59	.78	1.26	2.35	5.66
1919	.13	.71	1.20	.17	.73	2.94

It will be noted that the precipitation since the first of the year is less than half of the normal and even less than for the dry year of 1919. However, the soil carried a good supply of moisture from late summer and fall rains and this supply is still carrying the crop without serious injury from lack of moisture. Rain will be needed in the near future, however, or the wheat crop will be very short in the Judith Basin. All of the precipitation this spring has been in the form of light showers, 0.21 inch being the most recorded on one day.

The maximum temperatures for the last half of May were 88° and 87° on the 23rd and 26th, respectively, and the minimum temperatures were 36° and 37° on the 30th and 20th, respectively.

The plow-less method of fallowing is being practiced more than ever this year in the Basin. A number of farmers are using the new disc harrow or " gold digger" type of implement which is doing good work, where rocks are not bad. Others are using their duckfoot cultivators with narrow shovels for the first two times over their land. These methods have made it possible to complete the first operation of fallowing earlier, although most farmers do not feel that they will greatly reduce the fallow operations, as it will be necessary to go over the ground more times.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens) (May 31)

The weather during the month of May in the Columbia River Basin of Oregon was unfavorable for crops. There was no rainfall of benefit to crops, the total at Moro for the month being only 0.10 inch. In addition to lack of precipitation, higher than normal temperatures prevailed except for the first four and the last five days of the month. T he highest temperature was 91 degrees on the 24th and the lowest 28 degrees on the 2d.

Winter wheat, which at Moro is now fully headed, would be greatly benefited by rain. On the shallow soils drought injury is marked and on the deeper soils the crop probably will suffer if no rain falls within the next two weeks. In northern Sherman County the prospects still are good for fairly high yields of winter wheat. On the shallower soils in the southern part of the county, however, severe drought injury already has occurred and the winter-wheat crop will be a failure unless the drought, which already has lasted more than six weeks, is broken.

Spring wheat, the earlier varieties of which are now beginning to head at Moro, does not yet show much drought injury. The straw will be short and the yields low if the dry weather continues.

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (May 31)

The weather during the last half of May has been very favorable for the germination and growth of rice.

All of the station rice, except the last date-of-seeding on May 15, emerged from May 18 to 25. In the nursery and varietal experiments the stands are good, and reasonably good stands were obtained in the water-grass control and fertilizer experiments.

On commercial fields the stands of rice are reported to be quite variable. Where good seed was used on well-prepared seed beds the stands are as good as could be expected, whereas on poorly prepared land on which there was good deal of growth that was not killed in preparing the seed beds, the stands of rice are rather thin. One or two such fields have been abandoned.

The rice market remains about the same and indications are that there will be a good deal of rice carried over in California this spring.

The maximum temperature for the month of May was 98° F., on the 23 and 24th. The minimum temperature was 47° F. on May 4th. There was no precipitation during the month.

University Farm, Davis (Cereal Agronomy, V. H. Florell) (May 31)

Summer weather has prevailed for the past week and the grains in the experiment plots have ripened rapidly. Barleys in the plot experiments are fully ripe with the exception of Sacramento, which will be ripe in a few days. The grain is plump and well developed in the early maturing varieties. Sacramento and Vaughn are noticeably resistant to lodging. Atlas also is standing erect in most plots. Archer, the variety commonly grown in England, is showing considerable promise for this type of barley.

Most of the strains in the Coast selection experiment are badly lodged. Only six or eight strains seem to be outstanding in their resistance to lodging. Nearly all of the varieties in the late-sown nursery are fully matured. The present plan is to begin harvesting the barleys next week.

Varieties of oats in both plot and nursery are fully matured in most cases. The Fulghum selections show marked uniformity in time of maturity and are nor nearly ready to harvest. As was the case last year, Fulghum oats are showing marked resistance to lodging but even among these there are strains which are outstanding and free from this fault.

A few of the earliest maturing varieties of wheat are ripe. These include Hard Federation x Bunyip, Hard Federation x Prelude with Hard and White Federation almost as far advanced. The wheats adapted to California conditions should be fully mature in about a week.

From May 22 to 24 a trip was made over the Sacramento Valley to observe the condition of the cereals. They were found generally to be in excellent condition. Barley as well as wheat is filling normally, and the indications are that a fine crop will be harvested. Harvesting operations were in progress in a few fields at Arbuckle, about 50 miles north of Davis on the west side of the valley. The first stop was made at Arbuckle where there is a commercial seeding of Vaughn barley. Vaughn barley is a segregate from the cross Club Mariout x Lion made by Dr. Harlan at St. Paul, Minn., in 1912. For the past three years it has been the highest yielding variety in the plot experiments at Davis. In 1927, several seedings were made in the Sacramento Valley and this variety made a good preliminary showing. The two fields at Arbuckle were in very good condition and one of these promises to make an estimated yield of 30 sacks an acre.

A second seeding of Vaughn barley southwest of Chico along the lowlands of the Sacramento River was examined. This field was sown late in February and is making a good vigorous growth. It is believed by the farmer who is growing the variety that it might be particularly suitable for this type of land on account of its ability to produce a crop in a short period.

Atlas barley also was included in the sowings at both places. It appears to be producing a plump, well-filled grain in both fields. This variety is susceptible to leaf scald or rhyncosporium when sown early but when winter sown this disease is almost entirely absent. The field at Chico was noticeably free from the disease, while the infection was only moderately heavy on the field at Arbuckle.

G. A. Wiebe, of Aberdeen, Idaho, arrived at Davis Tuesday to study the cereal experiments. Dr. H. V. Harlan arrived last night and inspected the barley experiments today. He will proceed to points in the Sacramento Valley tomorrow.

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer (May 31)

Rust infection on common barberries was found in Ohio, for the first time this spring, on May 8. At the time this infection was observed only pycnia could be found. The first find of rust on barberries this year was almost one month later than the date of the first discovery of rust on barberries in Ohio, in 1928.

After the first find was recorded this year, rust was observed on barberries at the following places on the dates specified.

Owner	Nearest town	County	Date	Form
Ohio State University	Columbus	Franklin	May 14	Pycnia
E. N. Wagner	Sidney	Shelby	" 16	"
France Stone Co.	Maumee	Lucas	" 18	"
Ohio State University	Columbus	Franklin	" 19	Aecia

No stem rust could be found on wheat or rye in many fields examined in western and central Ohio in May.

A trace of leaf rust was noted on wheat on several farms in Franklin County on May 28. A trace of leaf rust was found on wheat in Delaware, Knox, Ashland, Wayne, Summit, Portage, and Geauga counties, respectively, on May 31. No leaf rust has been found on rye in Ohio this spring.

The condition of the wheat crop in Ohio this year is very poor. Ohio farmers probably will harvest only one-third as large a crop as they had in 1927. Undoubtedly it will be the shortest wheat yield produced in the State since wheat has been grown on a large scale here. Wheat suffered from freezing last winter and from cold dry weather this spring.

Less than one township was covered by a survey for barberries in the month of May. The scouts are working in heavily wooded territory in Ashtabula County. They are not finding especially large numbers of escaped barberries but they are finding some. T he bushes that are being recorded are well distributed over many sections.

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer [June 6]

Three field men began work on May 1 in an area of escaped barberries in Wabash County. Two more men began on May 28, and another on June 4. During the week of June 11, 20 men will be working in areas of escaped bushes, and by June 18, the entire force of 21 men will be in the field.

Areas of escaped bushes in Lake, Wabash, and Allen counties will be worked until July 2, when 16 of the field men will begin the intensive survey of Clinton and Howard counties. Five men will be kept in areas of escaped bushes during the entire summer.

Infection was found on barberries in Wabash County about May 10. The unusually cool weather has prevented the rust from developing and spreading to grains and grasses. On June 4, only about half the cluster cups were discharging aeciospores.

Oats in Indiana are looking very well. The winter wheat was nearly all winterkilled. That which was not winterkilled in central Indiana was just heading on June 5.

Since the Conference at Lincoln, Nebr., a great deal of time has been devoted to the preparation of a series of window displays. The first of the series is ready to be distributed to the State Leaders for use in the field. The art work for the second of the series is completed and is now ready for the approval of the Office. It is hoped that it will be possible to distribute at least three different window displays to the leaders this year and three more new ones next year.

The barberry demonstration for the Indiana State Fair is being prepared. It is planned to use this demonstration at the International Grain and Hay Show at Chicago, December 1 to 8, 1928.

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills (May 31)

Field operations in barberry eradication have been in progress since April 24, on which date five experienced scouts resumed the intensive second survey in Jo Daviess County. This county is in the extreme northwest corner of the State. It is one of the roughest counties in northern Illinois. At least one-half of each of the townships in which the survey is being conducted is in timber and scouting necessarily is very slow. Two large areas of escaped bushes near Galena and Elizabeth, Jo Daviess County, were surveyed last summer, and the men are now working farther away from the centers of these areas. The full force will begin work on June 7.

Rust infections were found on barberries in Stark County on May 7 by R. W. Bills, and in Jo Daviess and Ogle Counties on May 14 by L. H. Corbin.

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L. W. Melander [May 5]

The barberry field season in Minnesota opened on April 25. The second survey of Hennepin County was started at that time. In this county stem rust was heaviest in 1927. Early in the campaign many planted bushes had been destroyed, which indicated that perhaps many escaped bushes would be found on second survey. Our expectations are being fulfilled as can be seen from the following figures taken from the May monthly report: There were 555 original bushes, of which 508 were escaped, 38 sprouting bushes, and 450 seedlings found on 13 properties.

This year most of the common barberries are very heavily rusted, but there apparently were two different times for infection, an early date and a late date. The first pycnia were found on May 20. These early infections are now mature aecia which are discharging spores. The latter infection, which was very heavy, apparently took place around the latter part of May. This is rather unusual considering the very dry weather we have had all during the past month. To date no uredinia have been found.

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel [June 6]

The month of May was spent in making observations for rust infections on barberries and in making preparation for the opening of field activities during the first week of June.

No rust infections have been observed on the common barberry up to the present time this spring. This probably is due to the very unfavorable weather conditions. The climatological data for Nebraska for the month of April states that this month was the driest April since the beginning of statewide records in 1876; the total precipitation for the State averaged 0.46 inch.

The usual time for pycnia and aecia to appear on barberries in Nebraska is April 21 and May 5, respectively. The scarcity of rust on barberries this spring would indicate that there is very little danger of stem rust damage this year.

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger (June 9)

In spite of the late and dry season, barberries in eastern South Dakota are generally infected and the infection is severe for this time of year (June 9). The first infection this year was found on barberries in Brookings County on May 19. The aecia appeared to be about five days old when found. This infection was found one day later than the one last year, and two days later than the one in 1926, but 17 days later than the first infection ever reported in this State.

By June 6, barberries were found dispersing spores in Brookings, Minnehaha, Turner, and McCook counties. A few pustules of brown leaf rust of rye, Puccinia dispersa, were found in Brookings County on May 19. On the same date a rust known as Puccinia poarum was found on blue grass in Lincoln County. No stem rust has been found to date.

Crops in eastern South Dakota are badly in need of rain. In some areas considerable damage already has occurred. A general rain appeared over the eastern section on June 7, ranging from 0.10 to 0.43 inch. However, a great deal more moisture is urgently needed to save the crop. Conditions in western South Dakota are reported somewhat better.

Only one assistant on regular appointment has been used to date on barberry eradication. The work has consisted of resurvey in connection with rust observations. Seedlings and escaped bushes continue to appear in areas of known locations of barberries. Second survey will begin on June 15, with a crew of 18 assistants.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, C. C. Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham (June 9)

The first survey for barberries will be continued in the extreme western counties of Montana, the field men beginning work about June 10. It is believed that the first survey will be completed by the close of the field season of 1928.

Early crop reports indicate that a large acreage of wheat has been seeded in Montana this year. However, the month of May has been unusually dry and there is some concern among farmers regarding the future prospects of both winter and spring wheat crops.

Barberry bushes in Flathead County examined on May 30 and 31 were found free from rust infection. Leaf rust (Puccina triticina) was quite prevalent in Gallatin, Yellowstone, Fergus, and Judith Basin counties about May 1, but the drought conditions prevailing in these localities since that time seem to have retarded further spread.

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren [May 31]

During the month of May there has been considerable rain in Colorado which has made the road bad for barberry eradication. In spite of this fact, several areas of escaped bushes have been checked over and some interesting observations have been made.

In the area west of Loveland, several hundred escaped barberry bushes were treated last year. On May 28, the State Leader found a large crop of infected seedlings around every bush observed. At that time the aecia were formed but not opened.

With the weather conditions as they have been, barberries will be spreading rust early this year.

On the field inspections no leaf or stem rust has been found to date. Leaf rust is later than it was last year.

The school for barberry scouts closed May 28, and by June 4 there will be four men in the field on second survey of Weld County. By July 1, it is hoped to place two or three more men in the field.

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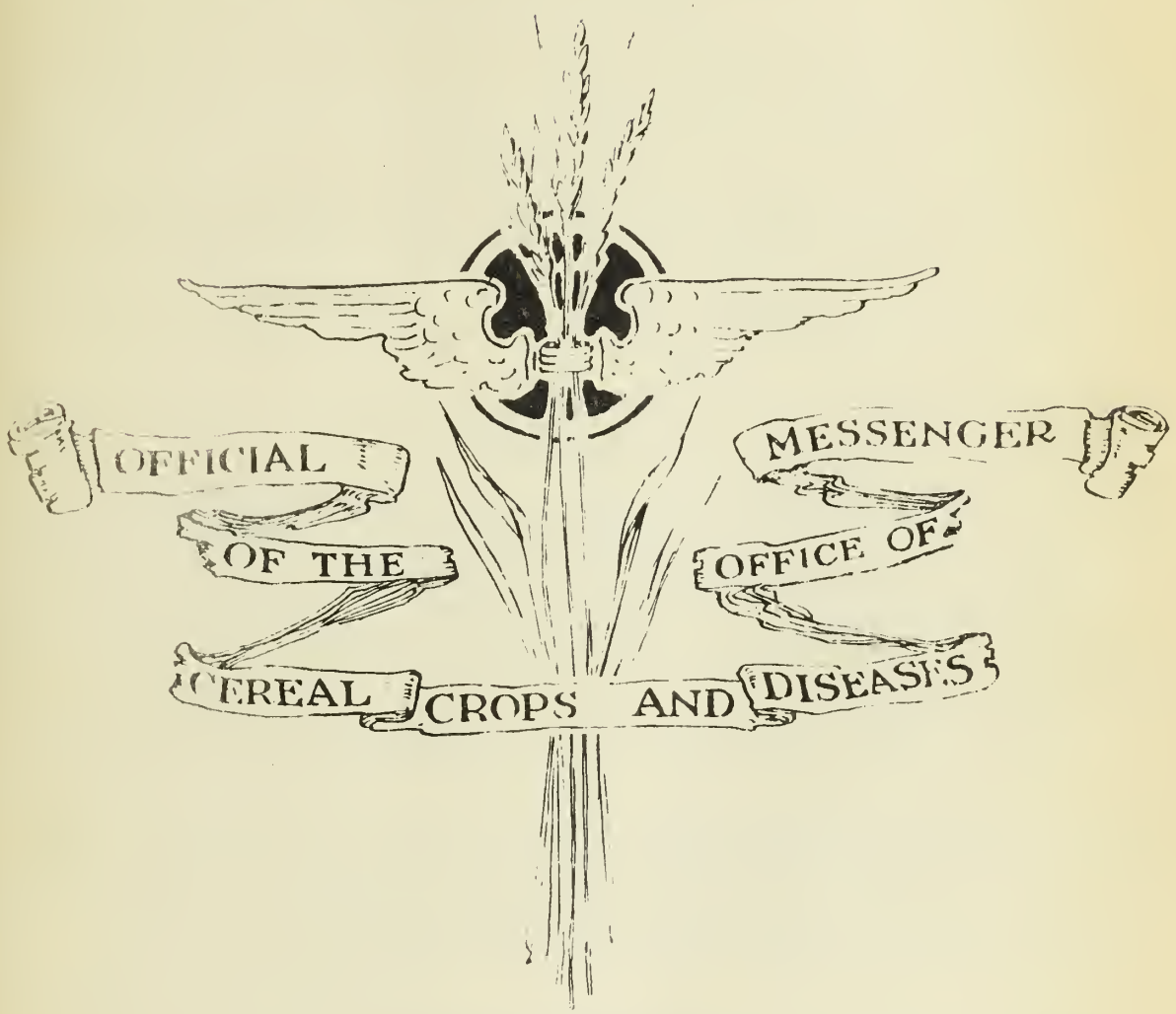

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C E R E A L C O U R I E R

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Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

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June 20, 1928
Personnel (June 11-20) and Field Station (June 1-15) Issue

PERSONNEL ITEMS

Dr. Olaf S. Aamodt, associate pathologist in charge of cooperative wheat-breeding experiments at University Farm, St. Paul, Minn., since 1917, resigned his position on June 15. Dr. Aamodt will spend four months in Europe in the study of cereal breeding after which he will assume his new position as geneticist and plant breeder at the University of Alberta, Edmonton, Canada. Clyde C. Allison was appointed agent on June 1 to work with Dr. Aamodt until the latter's resignation in order to become familiar with part of the research problems carried on by Dr. Aamodt. Mr. Allison will assist in the plant breeding experiments and in taking care of the rust nurseries this summer.

Dr. C. R. Ball, senior agronomist in charge, returned on June 20 after an absence of nearly three weeks in Minnesota, North Dakota, Wisconsin, and Iowa, where he conferred with State Leaders and others on barberry-eradication problems. Dr. Ball also addressed the annual convention of the North Dakota State Retail Merchants Association at Minot, N. Dak., on June 6, on the subject of "The Merchant and Agriculture."

In North Dakota Dr. Ball gave special attention to the possible necessity of surveying the timbered flood plains and lateral coulees of the Cheyenne, James, Mouse, and Missouri rivers.

In Minnesota Dr. Ball visited the wooded areas around Lake Minnetonka and thence southeastward as far as Albert Lea and La Crosse (Wis.), with reference to the problem of the numbers and distribution of escaped barberry bushes and their possible connection with the beginning of the stem rust epidemic of 1927. Large numbers of bushes still are found on the timbered lake shores and river banks of these counties. The aecial infection on barberry bushes in that district this year is extremely heavy and the importance of getting these bushes out is more obvious than ever.

In the adjacent northeastern portion of Iowa the same situation occurs, especially in Winneshiek, Allamakee, and Clayton counties, which are deeply dissected by drainage channels and heavily timbered in these valleys and tributary canyons. Barberries in this district also are heavily infected.

Dr. Ball reports that crops in North Dakota were late and slow in development but in fairly good condition, with the exception of winter rye, which had been injured by drought, as had also the pastures. Minnesota and Iowa also had been dry earlier in the season, but general rains throughout the upper Mississippi Valley during the past 10 days have relieved the situation very materially.

Carl W. Bower was appointed agent, effective June 13, to assist Dr. A. M. Brunson, associate agronomist in charge of the cooperative corn investigations conducted at Manhattan, Kans. Mr. Bower will take the place left vacant by the resignation of J. G. Willier, who resigned on March 3, 1927.

L. C. Burnett, agent in the cooperative oat breeding investigations conducted at Ames, Iowa, has been authorized to attend the summer meetings of the Corn-Belt Section of the American Society of Agronomy to be held at Wooster, Ohio, from June 21 to 23.

F. A. Coffman, associate agronomist in oat investigations, who left Washington on May 27 on an extended trip in the interests of oat investigations, wrote from Tucson, Ariz., on June 11 concerning his observations at certain points along the route.

In the stretch of country from Ohio to within a few miles of Kansas City, wheat was almost completely lost by winterkilling. Oats were very late and corn was either only a few inches high or not yet planted. In general, the rigorous winter and cold spring has been very detrimental to crops in the four States, Ohio, Indiana, Illinois, and Missouri.

At Columbia, Mo., on May 29, oats had not started to ripen. The straw was short, but the prospects were good for a fair yield.

Near Kansas City and around Manhattan, Kans., a good wheat crop was in prospect. Corn was not so backward and oats were in a much more advanced stage,--nearer the stage they should be than they were in any of the States traversed to the east.

At Manhattan oats were fully headed. All of the oats were infected by smut to some extent just as they were in Missouri. There was no rust of any kind worth mentioning on oats or wheat.

It was surprising to find so large an acreage of oats in the section of Texas around Greenville and from there to and around Denton. All oats seen by Mr. Coffman showed some smut infection, with the exception of Ferguson Navarro. No smut whatever was noted in this variety.

June 5 was spent at Substation No. 6 at Denton. Probably most of the oats there will yield from 40 to 60 bushels to the acre. Part of the crop was cut. At College Station, the oats were being threshed. Some of the varieties had produced excellent yields. Nortex shows considerable superiority in Texas, especially at Denton.

At the San Antonio Field Station on June 7 oats were only partly threshed. Dry weather had cut the crop short, although a good second crop is in prospect from secondary tillers. In the region west of San Antonio thousands of acres of oats are being grown.

Dr. Joseph F. Haskins was appointed agent, effective June 15, in connection with the cooperative agronomic corn-borer research in cooperation with the Ohio Agricultural Experiment Station at Wooster, Ohio. Dr. Haskins will assist with the biochemical phases of the investigations.

Dr. C. E. Leighty, senior agronomist in charge of eastern wheat investigations, returned to Washington on June 12 after an absence of seven weeks. In the latter part of April Dr. Leighty visited agricultural experiment stations in Georgia. He was in Sacaton, Ariz., for the month of May, taking notes on and harvesting wheats in the foreign introduction detention nursery on the United States Field Station, and later he made visits to stations near Yuma, Ariz., and Torrey Pines, Calif. He also stopped at Columbus and Manhattan, Kans., to take notes on experiments with wheat. At Knoxville, Tenn., and Swannanoa, N. C., Dr. Leighty was accompanied by Dr. E. B. Mains, of La Fayette, Ind., who took notes on the occurrence of leaf rust at these points.

R. W. Leukel, associate pathologist in charge of nematode investigations, will leave Washington on June 23 for Madison, Wis., where he will take notes on seed-treatment plots for the control of stripe disease of barley and bunt of wheat. Later, if conditions permit, Mr. Leukel also will take yield data on barley.

Dr. E. B. Mains, agent in the cereal-disease investigations being conducted in cooperation with the Purdue University Agricultural Experiment Station at La Fayette, Ind., came to Washington on June 12 to take notes on the occurrence of leaf rust on wheat and barley plots at the Arlington Experiment Farm near Washington, D. C. Dr. Mains had been with Dr. C. E. Leighty at Swannanoa, N. C., and Knoxville, Tenn., to take notes on the occurrence of leaf rust. He stated that leaf rust was not prevalent there at this time, the weather conditions not having been favorable for its development. He reports considerable leaf rust infection on wheat on the Arlington Experiment Farm.

Dr. J. H. Martin, associate agronomist in charge of grain sorghum and broomcorn investigations, returned to Washington on June 18 after an absence of nearly two weeks in the southeastern States studying the operation of combine harvesters.

The following members of the scientific staff of the Office of Cereal Crops and Diseases were authorized to attend the meetings of the Western Section of the American Society of Agronomy to be held at Berkeley and Davis, Calif., on June 19, 20, and 21.

Dr. Ruth F. Allen, Berkeley, Calif.

Dr. F. N. Briggs, Berkeley, Calif.

J. Allen Clark, Washington, D. C.

F. A. Coffman, Washington, D. C.

V. H. Florell, Davis, Calif.

Jenkin W. Jones, Biggs, Calif.

J. Foster Martin, Moro, Oreg.

K. S. Quisenberry, Washington, D. C.

D. E. Stephens, Moro, Oreg.

VISITORS

Dr. J. R. Fain, professor of agronomy and farm management, Georgia State College of Agriculture, Athens, Ga., visited the Office several times in the week of June 11.

Dr. W. H. Tisdale, of the E. I. du Pont de Nemours & Company, Inc., Wilmington, Del., was an Office visitor on June 18 and 19.

MANUSCRIPTS AND PUBLICATIONS

30 A manuscript entitled "The Merchant and Agriculture," by C. R. Ball, was submitted on June 9 for publication in the Yearbook of the North Dakota State Retail Merchants Association.

The article entitled "A Cytological Study of Puccinia glumarum on Bromus marginatus and Triticum vulgare," by Ruth F. Allen, appears in the Journal of Agricultural Research 36 (6): 487-513, pls. 1-12. March 15, 1928. (Cooperative investigations between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.) (Mss. received by the Journal, Nov. 29, 1927.)

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding. L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett) (June 5)

In spite of the severe drought, which has opened up cracks in the finer soils to a depth of about 24 inches, our oats are beginning to joint, and the wheat is just beginning to come into head. Corn is not suffering as yet but it would grow much more rapidly if there were sufficient moisture.

Starting on June 5, we expect to have tours of farmers from various counties in the State almost continuously until the 15th of July. There will be an average of more than one county to a day; at the present time I am unable to estimate the number of people who probably will be present. I believe that last year the number ran something over 14,000.

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer) (June 18) (J. F. Trost)

The corn crop in this State developed rather slowly during the first part of the month. Rain occurred frequently enough to interfere with cultivation throughout the southern half of the State, but the accompanying cool weather held the weeds in check as well as the corn. During this period the unusually good stands were reduced in many places by cutworms, webworms, and wireworms. During the week of June 10-16, the weather was hot and dry and very favorable for rapid growth.

Thinning on the experimental plots is about half completed at present. Mr. St. John went to Wanatah on June 11 and 12 to take records on emergence and seedling growth and to supervise thinning. Similar records were taken on the fertility series at Bedford and on the hybrid comparison plot at Vincennes on June 15 and 16. Trips will be made to Culver, Farmland, and North Vernon to complete these records this week.

During thinning in the experimental plots and in examining weak seedlings in general fields of open pollinated corn, a few cases of mesocotyl rots have been observed. Penicillium spp. have been most frequently found associated with this type of seedling infection this year. Very few cases of genuine seedling blighting have been found.

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, H. S. Jackson and E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, ----------)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (June 16)

Sorghum and broomcorn seeding was pushed rapidly in the first half of June, and the greater portion of the experiments has been seeded. Conditions for germinations have been excellent and good stands are appearing in from 5 to 6 days from seeding.

In view of results from the date-of-seeding experiments most of the seeding was done between the 11th and 15th of this month. This year about 650 head rows of sorghums and 130 of broomcorn have been seeded, in addition to the varietal experiments which consist of duplicated 4-row plats sown on three different dates.

Wheat is ripening throughout Woodward County. Harvest will soon be in full swing; it will be a few days later than last year.

Maximum temperature for June to date, 92 degrees on the 7th; minimum, 45 degrees on the 5th. The precipitation of 2.07 inches was well distributed.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson) (June 15)

The appointment of Carl W. Bower as agent became effective on June 13 upon his arrival at Manhattan, where he will be associated with the corn investigations that are being carried on cooperatively with the Kansas State Agricultural College. Mr. Bower has spent the past year in graduate work at the Iowa State College, where he received the M. S. degree on June 11. He majored in Farm Crops and minored in Plant Physiology and Genetics.

The Fourth Annual Agronomy Field Day was held on June 9. The weather was fine and the visitors seemed unusually interested in the experiments. The work being done in bind-weed eradication, particularly with chemical sprays, was made a special feature of the program.

Dr. C. E. Leighty was a Station visitor on June 6 and 7.

The weather for the first half of June this year has been unusually cool with ample moisture. Wheat is ripening slowly and there are good prospects for a bumper crop. First-crop alfalfa is mostly cut, and corn is being cultivated generally for the second time.

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (June 11)

Leaf rust of wheat continues to develop very slowly in Kansas. The season thus far has been unusually cool and as a consequence wheat is maturing very slowly and harvest will be late.

I have just returned from a trip to various points in southeastern Kansas in company with Dr. C. E. Leighty and Prof. John H. Parker. Leaf-rust notes were taken on varieties and hybrids of winter wheat in a nursery at Columbus, Kans. On June 9, Mr. Parker and I visited State experimental fields at Ft. Scott, Parsons, and Moran, in company with Supt. I. K. Landon. At those points only light to moderate infections of leaf rust were noticed on wheat varieties in field plats. The heaviest infection was seen in the nursery at Columbus.

Kawvale, a new variety of winter wheat, seemed very promising in plats at all of the four stations. The variety showed no winterkilling and only a trace of leaf rust, while Fulcaster showed considerable winterkilling and much more rust. Kanred and Blackhull also seemed to be promising at the four points mentioned.

Spring work in the rust nursery at Manhattan is progressing very satisfactorily. All varieties are now fully headed, and many crosses have been made. Many of these are composite crosses or combinations of desirable hybrids with varieties possessing stiff straw, earliness, and high quality of grain. Leaf-rust notes will be taken immediately and will continue to be taken as rapidly as possible on more than 1,600 rows of winter wheat and 300 rows of spring wheat.

I have been unable to find a single pustule of stem rust at any point in Kansas so far this year. Oats and wheat seem to be equally free from it. I observed a bare trace of crown rust at Columbus, Kans., on June 8.

In general the wheat crop in Kansas is in excellent condition and a good yield is in prospect. Recent wind and hail storms in central and southern Kansas have done considerable damage, but such areas are small. Just at present heavy rains and high water in southeastern Kansas are causing wheat growers considerable anxiety, although the crop is not injured as yet. The most recent estimate of the State Board of Agriculture on the 1928 yield is 158,000,000 bushels. Estimates vary from 140,000,000 to 174,000,000 bushels.

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (June 16)

The first 16 days of June netted a rainfall of 6.68 inches which is the third highest in 60 years. The highest rainfall recorded for any June at this station was 10.04 inches in 1909. The precipitation last night amounted to 2.38 inches, with a heavy hail of approximately one minute's duration. This hail caused a 5 per cent damage to the small-grain crops. We regard ourselves fortunate in having escaped more serious losses. A number of small sections throughout the State have had losses by hail this year.

In general the wheat crop in Kansas promises to be among the largest on record. Local areas in the northwestern part of the State had heavy winter losses, but where the plants survived sufficiently to make a fair stand the wheat has had the full advantage of the available moisture.

Sorghums and corn are making slow growth because of cool weather. Heavy losses of stands of sorghums have occurred because of the dashing rains. The first seeding in the sorghum nursery on the Cereal Project survived the storms with about one-half stand. However, the second date of seeding will be made just as soon as the weather will permit and it is hoped that a full stand will be obtained. In the varietal field a different type of seed bed was used and little loss of stand occurred.

Harvest will begin in about 10 days. Small grains on fallow have lodged badly.

The first "Wheat Growers Field Day" was held on June 14. Rain interfered with the day's program, but approximately 100 farmers from 17 counties of the western part of the State made the trip to the Station. The farmers displayed much interest in the cultural and varietal experiments.

C. O. Grandfield from the State College was an official visitor on the 14th. Doctors Walther Kalkoff and Gerhard Mager, two German students, were recent visitors at the Station.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle) (June 15)

On account of the drought in May and the first days of June, much flax which was sown on May 14, has just completed its emergence, while plants alongside from seed of the same sowing are three or four inches tall. Very susceptible varieties of flax had succumbed to attacks of wilt before the second emergence had started. Good showers during the past 10 days have improved soil conditions greatly and started germination of seed which had been dormant in the soil for over two weeks.

No disease has been apparent except wilt in the case of the early emerged, more susceptible varieties of flax.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (June 15)

Low temperatures have prevailed during the first half of June. A minimum temperature of 32 degrees was recorded on the 1st without any apparent frost injury. The temperature was near the frost line for several successive nights around the 10th and a trace of frost injury was observed in low places.

The prevailing low temperatures have helped to offset the effects of comparatively dry soil conditions. Pastures and hay crops show distinctly the effects of drought. Cereal crops have not suffered so much and could produce a good crop yet with sufficient rain from now until ripening. The straw will be short, however, especially in the case of winter grain and early spring grain.

Several local showers have occurred this month, totaling 0.96 inch, which have relieved drought conditions for the present. The last rain early this week apparently became general to the eastward, as heavy rains in the State have been reported to the east and south.

Winter rye is fully headed and winter wheat and spring barley are heading. Corn which got a good start during the hot weather in May has grown more slowly this month. The selfed lines of corn in the nursery showed very poor germination, but germination in the field varieties was good.

Cutworms are doing some injury in cornfields and in some cases in wheat. Young grasshoppers are numerous in some localities.

Local reports indicate that the acreage of spring wheat in this (Stark) county is about 10 per cent greater than last year. Dry weather in May probably reduced the possible acreage of flax, and caused uneven germinated of that sown.

The cereal nursery is being cultivated and hoed, and stakes are being prepared for the varieties in plats.

It is planned to hold the annual picnic at the Substation during the last week in June.

The Substation was visited not long ago by Director P. F. Trowbridge of the State Experiment Station and more recently by Mr. W. J. Church of the State Board of Administration and by Mr. C. F Ainslie, Government entomologist from Sioux City, Iowa.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (June 16)

The first satisfactory rainfall of the season, recorded on June 11 and 12 and amounting to 2.58 inches, is certain to be of great benefit to crops in this locality. The total rainfall for the first half of June, including small showers early in the month and 0.26 inch on June 15, was 3.12 inches. This nearly equals the normal rainfall for the entire month of June. Nevertheless, the total rainfall for the period from January 1 to June 15 still is about $2\frac{1}{2}$ inches below normal for that period.

Flax sown in the varietal plats on May 31 was up about June 9. Germination is very irregular in the flax nursery. Germination doubtless will soon be complete following the recent abundant rainfall.

Maximum temperature for the first half of June, 80 degrees on June 6 and 15; minimum, 35 degrees on June 8.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (June 13)

The weather continues dry. Crops are about as short as they were in 1926. Wheat is beginning to head at a height of 10 inches. During a trip of about 40 miles north of Bismarck yesterday, crops were noted to be very short and poor. Pastures do not look as though there were any grass at all in them. However, stock seems to be in very good condition so far.

(June 16)

The weather of the past few days has been more favorable for cereal crops. Temperatures have been cool. The heavy rain (2.53 inches) which fell on June 11 and 12, was very beneficial to all crops and grasses. The earlier seeded fields of grain have been revived by the rain and now show promise of making a fair crop. Weeds, especially Russian thistles, are very bad in some fields where poor tillage methods were used preparatory to seeding.

Cutworms have done considerable damage in some localities. Farmers are plowing up some of the fields damaged by the worms and are planting feed crops. They also are planting feed crops on fields where the cereal crop seed did not germinate prior to the recent rain.

The varieties in the wheat and oat plots are heading at a height of 10 to 12 inches. Two early varieties, Quality and Reward, were fully headed today. Sixty-Day oats were first headed today.

There was a light frost on the night of June 9, which killed some of the more tender vegetation, such as beans, tomatoes, etc., in the lower places. No damage was reported to any vegetation on the Station.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (June 16)

The precipitation for the first half of June was 0.85 inch recorded on five days, the greatest on any one day being 0.24 inch. The normal rainfall for June is 3.19 inches. Crops in the Judith Basin are rather seriously affected by the drought, although cool weather has been a great help to them.

The maximum temperatures were 74 degrees and 71 degrees on the 7th and 15th, respectively. The minimum temperatures were 33 degrees and 34 degrees on the 1st and 10th, respectively. Winter wheat is beginning to head and is about 15 inches high. Spring grain is not yet seriously injured but must have rain soon or the yields will be low. All plots on the Substation have been trimmed and marked.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe) (June 14)

The cereal crops have just begun to head. This is somewhat earlier than last year.

Recent rains amounting to about one inch have practically assured the grain crop on the unirrigated lands. Yields of 25 bushels an acre will not be uncommon this year.

Prof. Clyde McKee, of the Montana Agricultural Experiment Station visited the Substation on June 12.

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, V. H. Florell) (June 14)

Harvest of the nursery barleys was begun on June 4 and will be completed very soon. The harvest of the oat nursery is in progress and will be completed tonight. All the varieties of wheat, barley, and oats in plots have been harvested. The barleys in both plot and nursery were in generally bad condition due to the hot, dry weather. In the plot experiments there was some loss from breaking up of straw and heads on account of handling with the binder.

Temperatures of over 100 degrees prevailed from June 2 to 8, inclusive. The maximum temperature, 109 degrees, was recorded on June 5. The high temperatures were accompanied by a strong "norther" and the unripe grain was matured rapidly and became more or less pinched in some cases. This is true of late-maturing varieties in the experiments and of late-sown commercial fields. There was considerable injury from shattering in barleys and particularly in oats in commercial fields. Several severe grain fires occurred throughout both the Sacramento and San Joaquin valleys. In Yolo County, approximately 7,000 acres were burned over in one area.

On Monday, June 11, a trip was made into the San Joaquin Valley with Mr. G. A. Wiebe, of Aberdeen, Idaho, to inspect the condition of grain. The section visited is south of Davis through Dixon into the Montezuma Hill region, about 25 miles south of Dixon. Here the country is very similar to the Palouse country in Washington. The best fields seem to be located on the hill tops. Wheat is the principal cereal crop and Little Club the most important variety because of its ability to resist shattering. Wheat in this section will make a good crop.

The trip was continued southward through Tracy and down the west side of the San Joaquin Valley through the barley fields between Tracy and Newman. Immediately south of Tracy the crops were found to be very poor because of a shortage of moisture, but farther south toward Newman they were in fairly good condition. The next section visited was east of Modesto in the vicinity of Montpelier. This is a good grain section with many large fields. Here the grain crop in general was good. Several large fields of Kanota oats were seen. A good erect growth of straw was produced in this cereal, but investigation showed that there had been pretty heavy losses of grain from high winds. Probably from 30 to 40 per cent of the grain was on the ground. Barley was in excellent condition. There was a kernel of good quality in most samples examined. Several large fields of rye also were seen. The agricultural lands southeast of Stockton were devoted almost entirely to Baart wheat, of which some excellent fields were seen.

Mr. W. T. Craig, of Cornell University, arrived at the Farm on June 6 to harvest Dr. Love's hybrid wheats. This nursery was in excellent condition and just in the proper stage of maturity. Mr. Craig has just completed his harvest and will return to Ithaca on June 15.

J. Allen Clark and K. S. Quisenberry arrived on June 6. Mr. Clark has finished harvesting his hybrid wheats today and Mr. Quisenberry will complete his work by Monday.

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer (June 15)

First survey for barberries in Ashtabula County, Ohio, progressed slowly during the first two weeks in June on account of rainy weather. This rain was general over the State and was of considerable benefit to small-grain crops.

Rust on barberries is general over Ohio at this time. Leaf rust may be found in wheat fields in any part of the State but no leaf rust has been found on rye, oats, or barley so far this spring. No uredinia of stem rust have been found on any of the small grains this year. Stem rust is late in developing and the maturity of cereal crops is much delayed.

The writer spent July 13 and 14 in Chicago, Ill., with W. F. Reddy, State Leader of Michigan, in discussing with officials of the Field Museum of Natural History ways and means of preparing permanent barberry-eradication demonstrations for museums.

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy (June 19)

Infection was found on common barberries in Michigan as early as May first. This is the earliest known date for barberry infection. The weather has been favorable for heavy infection, except in the southwestern portion of the State. Material is being gathered at this time which carries as heavy an infection as seems possible. If weather conditions continue favorable, heavy local attacks of rust may be expected.

The field force for the coming season has been selected. From more than 300 applicants, the privilege of writing the examination was given to 60 men. Thirty-eight men were chosen from the 60 candidates and they will constitute the summer field force.

During the past season over half a million barberry bushes were eradicated from Antrim, Benzie, Charlevoix, Emmet, Grand Traverse, and Leelanau counties. Original survey was completed in Charlevoix and Emmet counties. This season original survey will start in Antrim, Benzie, Grand Traverse, and Leelanau counties.

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills [June 15]

Twenty field men reported for duty on June 7. After a school of instruction and an examination they were assigned to territory.

First survey is now being conducted in Lawrence, Richland, and Clay counties. Second survey of Jo-Daviess County is being continued.

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L. W. Melander (June 16)

On Tuesday, June 12, 15 men were placed in the field. This will be the entire crew for this year. Field work this year will be in Hennepin, Carver, and LeSueur counties. Second survey of Hennepin County has been in progress since the latter part of April. All but three townships in LeSueur County were second-surveyed in 1927. The second survey of Carver County was started this week.

Dr. C. R. Ball addressed all of the field scouts on the evening of June 11. Late infection of barberries in this State was very heavy. At the present time a tremendous number of aeciospores are being discharged. There is a possibility of severe damage to grain in the vicinity of barberries this year.

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G.C.Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 15

June 30, 1928
Personnel (June 21-30) and Project Issue

PERSONNEL ITEMS

Miss Dorothy E. Bossert, assistant clerk in the Washington office since November 28, 1927, resigned on June 15 to accept another position.

F. A. Coffman, assistant agronomist in oat investigations, wrote on June 24 from Corvallis, Oreg., that the meetings of the Western Section of the American Society of Agronomy, held at Berkeley and Davis, Calif., from June 19 to 21, inclusive, were well attended. Of the western States only New Mexico and Colorado were not represented. Dr. E. F. Gaines, cerealist, State College of Washington, Pullman, was chosen president and Prof. H. W. Hulbert, agronomist, College of Agriculture of the University of Idaho, was elected secretary for the next year. The 1929 meetings will be held at Moscow, Idaho, and Pullman, Wash.

Mr. Coffman intended to be at Pullman, Wash., and Moscow, Idaho, early in July and then proceed to Moccasin, Mont., Sheridan, Wyo., Ardmore, S. Dak., North Platte, Nebr., Akron, Colo., Ft. Collins, Colo, Hays, Kans., and Lincoln, Nebr., arriving at Ames, Iowa, shortly before the middle of July to take care of the oat harvest in the cooperative nurseries.

A. C. Dillman, associate agronomist in charge of flax investigations, was at New Brunswick, N. J., on June 25 to look over some preliminary experiments with seed flax varieties conducted by Dr. H. B. Sprague, agronomist at the State agricultural experiment station. The 14 varieties included in the experiments had made excellent growth and were in full bloom. The new Bison variety, recently distributed by Prof. H. L. Bolley, of North Dakota, is especially interesting. This variety has wisteria-blue flowers of a slightly bluer shade than that of most flax varieties. This should easily distinguish the variety from the others commonly grown.

Wheat, oats, and barley at the experiment station were in good condition. No stem rust was noticed and only a trace of leaf rust was found. Considerable mildew was seen on some varieties of wheat.

In the afternoon Mr. Dillman was taken on a drive of about 75 miles through Middlesex and Monmouth counties, the fine agricultural region of central New Jersey. Hay harvest was in full progress. Corn appeared somewhat backward, being only 6 to 10 inches high. The potato crop, important in Monmouth County, was in excellent condition, the vines covering the ground.

Miss Marion A. Griffiths, associate pathologist in cereal-smut investigations, left Washington on June 23 for points in the Pacific Northwest and in the North Central States, where she will take notes on wheat-bunt nurseries, visit grain elevators, and assist in a survey of the wheat-growing areas to determine the distribution of the two species of bunt.

Mrs. Nellie P. Hanaway, assistant clerk in the Washington office since March 18, 1924, resigned her position on June 30. She and her husband will make their home in New York.

C. H. Kyle, agronomist in corn investigations, will leave Washington on July 1 for New Orleans and Baton Rouge, La., and Knoxville, Tenn., to confer with officials of the State agricultural experiment stations and with members of this Office regarding cooperative corn experiments.

H. H. McKinney, pathologist in charge of cereal-virus-disease investigations, returned to Washington on June 24 from a two-week trip in Louisiana in the interests of corn-mosaic experiments.

F. D. Richey, agronomist in charge of corn investigations, returned to Washington on June 24 from Ohio where he attended the meetings of the Corn-Belt Section of the American Society of Agronomy held at Columbus and Wooster from June 21 to 23, inclusive.

T. R. Stanton, agronomist in charge of oat investigations, left Washington on June 26 for a brief trip into New Jersey and New York in the interests of oat investigations. He writes from Batavia, N. Y., on June 30 that crops in the vicinity of New Brunswick, N. J., in general were only fair and somewhat backward. Early varieties of oats were about fully headed. Kanota and Fulghum were the most promising. The later varieties were just beginning to head. Considerable mildew was present on winter wheat.

At the Brooklyn Botanic Garden, Brooklyn, N. Y., numerous hybrid strains of oats were noted which have been free from smut for eight generations. Abundant evidence was noted which showed the occurrence of distinct physiologic races of oat smut.

Crops in the Mohawk Valley along the New York Central railroad seemed to be rather backward. Corn was small and many oat fields were exceedingly weedy. In the vicinity of Batavia much complaint is being heard regarding the inability to cultivate corn and beans because of the continuous rainy weather which has prevailed for about three weeks.

On July 1, Mr. Stanton expected to go to Ithaca, N. Y., to begin graduate study in the department of plant breeding of Cornell University for the next ten months.

J. W. Taylor, associate agronomist in charge of small-grain agronomy at the Arlington Experiment Farm, left Washington on June 20 to examine wheat fields at several places in New Jersey.

VISITORS

R. P. Bledsoe, agronomist at the Georgia Agricultural Experiment Station, Experiment, Ga., called at the Office on June 27 to discuss possible cooperation in cereal investigations. Mr. Bledsoe is making a round trip of several experiment stations in the Atlantic Coast States.

G. G. Moe, associate professor of agronomy in the University of British Columbia, was an Office visitor on June 21.

Dr. Wilmon Newell, dean of the college of agriculture and director of the Agricultural Experiment Station of the University of Florida, was an Office visitor on June 28.

MANUSCRIPTS AND PUBLICATIONS

31 A manuscript entitled "Greenhouse Studies on the Relation of Age of Wheat Plants to Infection by Puccinia triticina Eriks.," by C. O. Johnston and L. E. Melchers, was submitted on June 28 for publication in the Journal of Agricultural Research.

Galley proof of article entitled "Downy Mildew (Sclerospora graminicola) on Everglade Millet in Florida," by William H. Weston, Jr., and George F. Weber, for publication in the Journal of Agricultural Research, was read June 26.

The article entitled "Inheritance of Earliness and Other Agronomic Characters in Rice," by Jenkin W. Jones, appears in the Journal of Agricultural Research 36 (7): 581-601, figs. 1-5. April 1, 1928. (Rec. June 22) (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.) (Mss. received by the Journal on Dec. 15, 1927.)

Calif. Agr. Expt. Sta. Bul. 454 entitled "Rice Experiments in Sacramento Valley 1922-1927," by Carroll F. Dunshee, has just been received. (The data in this bulletin were gathered in part in cooperation with the Office of Cereal Crops and Diseases, Bureau of Plant Industry, and in part in cooperation with the Division of Agricultural Engineering, U. S. Department of Agriculture, and the Division of Water Rights, California Department of Public Works.)

CORRECTION

The title of the article by J. H. Martin, which appears in the U. S. Department of Agriculture Yearbook for 1927, is erroneously stated in the Cereal Courier of June 10 (Vol. 20, no. 13). It should read as follows: "Sorghum Grain Can Be Harvested with An Adjusted Combine."

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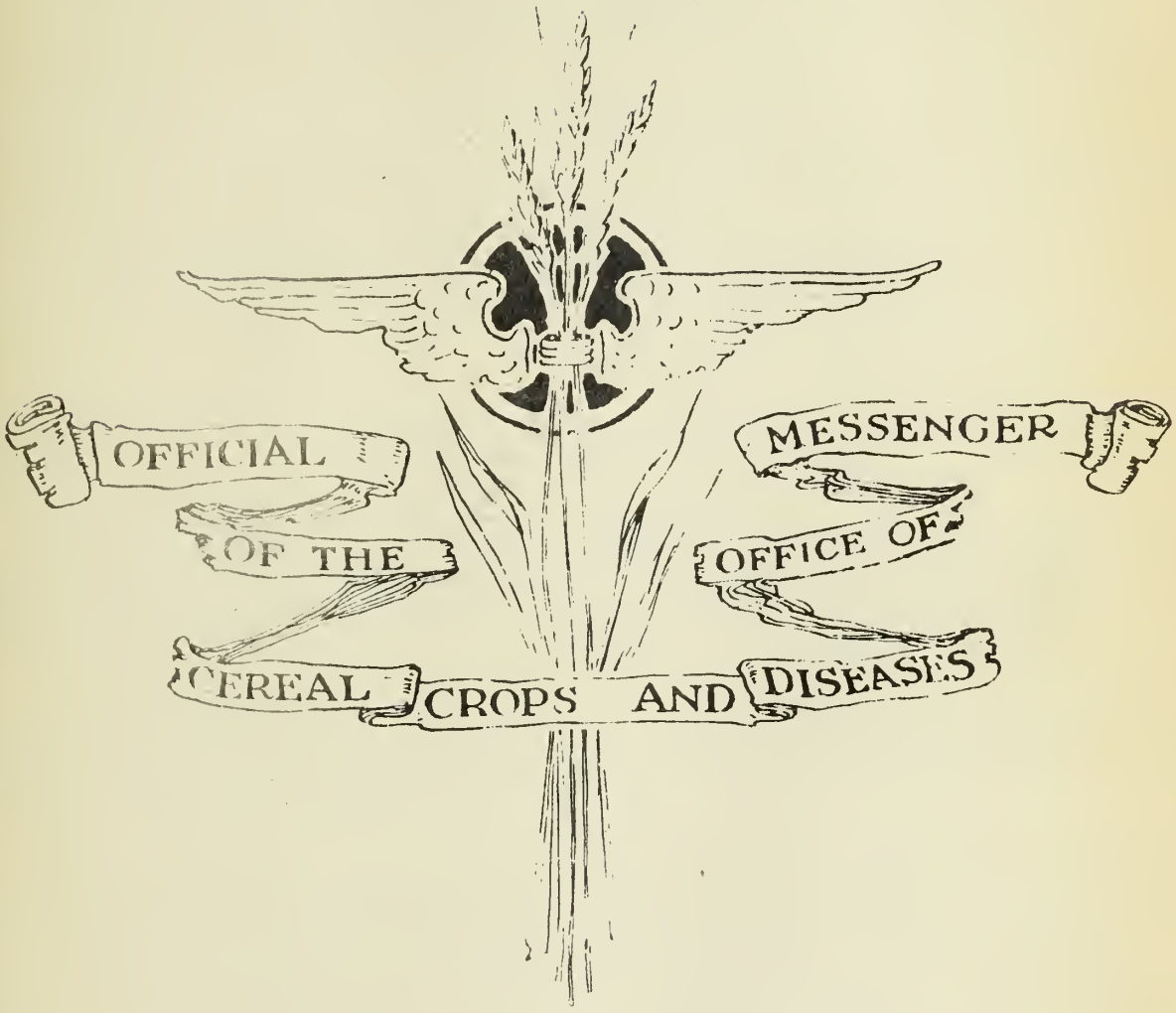

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 16

July 10, 1928
Personnel (July 1-10) and Field Station (June 16-30) Issue

PERSONNEL ITEMS

Charles E. Chambliss, associate agronomist in charge of rice investigations, will leave Washington on July 14 for Ellsberry, Mo., where he will inspect cooperative experiments with rice and assist in arranging field details for rice investigations to be undertaken on a large scale next year.

J. Allen Clark, senior agronomist in charge of western wheat investigations, who left Washington on May 29 to study wheat varieties and hybrids in breeding nurseries in different parts of the West, wrote on July 4 from Pendleton, Oreg., of the progress he had made.

At Manhattan, Kans., late in May, Mr. Clark and Mr. Quisenberry looked over the winter-wheat breeding nursery and the varietal plots on the agronomy farm. Among the promising new varieties of wheat were Tenmarq and Kawvale. In the nursery, selections from Kanred x Hard Federation, Kanred x Prelude, and other winter x spring crosses appeared promising because of their earliness. Spring habit strains and segregating strains have been largely eliminated through winter killing and selection. Winter-habit strains as hardy as Kanred appear to have been obtained, judging from field survivals and artificial freezing experiments.

June 2 was spent at Hays, Kans., inspecting the cooperative varietal plot experiments and nursery trials. The experiments were in excellent condition and a good crop was in prospect. Several of the late hardy winter-wheat selections bred for hardiness at northern stations looked much more promising at Hays than at Manhattan. However, earliness also is an important factor at Hays, and the combination of hardiness and earliness appears to be the most important breeding problem for the improvement of hard red winter wheat for this section of Kansas.

At Davis, Calif., Mr. Clark and Mr. Quisenberry inspected the cooperative experiments and breeding nurseries of Mr. Florell and Dr. Briggs, and carried on certain work of their own. The most outstanding productions in Mr. Florell's nursery were selections from the Marquis x Hard Federation cross, together with numerous selections made from various crosses, carried in bulk, and grown two generations a year until the sixth generation, when the selections were made. Nearly two weeks were spent at Davis studying foreign introductions and classification and identification nurseries, and harvesting and describing hybrid plants in F_1, F_2, and F_3 generations for inheritance studies of certain wheat characters.

Mr. Clark presented a paper entitled "Inheritance in Crosses of Marquis and Kota for Improvement in Yield and Protein Content of Montana Spring Wheat," at the meetings of the Western Section of the American Society of Agronomy held at Davis and Berkeley, Calif., June 19 to 21, inclusive.

June 23 and 24 were spent at Corvallis, Oreg., where a day's study was devoted to a classification and identification nursery. The Sherman County Branch Station, at Moro, Oreg., was reached on June 26 and the cooperative cereal experiments were inspected with Supt. D. E. Stephens and J. F. Martin. Two outstanding new wheats have been developed at this station and are being increased for commercial distribution, namely, Oro, a smut-resistant hard red winter variety, and Hard Federation, Selection 31. These are both outstanding in comparison with standard varieties and many other new selections of hybrids and varieties. The differential reaction of 43 collections of smut on 10 varieties of wheat were being studied by Miss Marion A. Griffiths, associate pathologist in cereal-smut investigations. The smut nursery at Moro is identical with a similar one at Corvallis, Oreg. From their reaction on different varieties, there appear to be at least a dozen different physiologic forms of smut present in this collection. Many of the varieties which in previous years had been free from smut were heavily infected by some one or more of these smut collections. As an average for all strains of smut, Ridit probably ranks most resistant, Hussar second, and Oro or Martin, third.

On July 1, Mr. Clark went over the experiments at the Adams County Branch Station, at Lind, Wash., and on July 2 he conferred with officials of the Washington Agricultural Experiment Station at Pullman. The smut experiments at this station confirmed those in Oregon. As in Oregon, Ridit showed the greatest resistance to all forms. Albit was very susceptible to some of the forms but maintained its immunity to the form previously used in the smut-breeding experiments at Pullman. After an inspection of the experiments at Moscow and Winchester, Idaho, on July 3, Mr. Clark proceeded to Pendleton, Oreg., where on July 4 he expected to see the locations under consideration for the new Federal station and also the cooperative farm nursery.

A. C. Dillman, associate agronomist in charge of flax investigations, left Washington on July 4 for St. Paul, Minn., to study the classification of flax varieties in the nurseries at University Farm. Later Mr. Dillman will go to Mandan, N. Dak., and Bozeman, Mont., where similar classification nurseries are being grown. He also will visit other experiment stations in the flax-growing area, including Fargo and Dickinson, N. Dak., and Moccasin, Mont. Mr. Dillman will be in the field approximately two months.

Dr. Hurley Fellows, assistant pathologist in charge of the cooperative investigations with wheat foot rots at Manhattan, Kans., left for Oregon and Washington early in July to make a survey and preliminary investigation of the wheat foot rot in Wasco County, Oreg., and Klickitat County, Wash. As reported by Dr. H. B. Humphrey and Supt. D. E. Stephens, of the Sherman County Branch Station, Moro, Oreg., foot rot of wheat and barley is causing important losses in these counties.

Bascom M. King, of Columbia, Mo., was appointed agent, effective July 2 to have charge of rice investigations at Ellsberry, Mo., conducted in cooperation with the Missouri Agricultural Experiment Station.

H. H. McKinney, pathologist in charge of cereal-virus-disease investigations, who returned to Washington on June 24 after a two-weeks' trip in Louisiana and Mississippi, reports that at Baton Rouge, La., field studies were carried out on corn mosaic occurring in the cooperative corn plots on the farm of the Louisiana Agricultural Experiment Station. Especial attention was given to selecting plants showing different symptom types. While different types were evident, the range of variation was less than in the case of mosaic of the small grains. This difference may be due partly to the fact that a smaller percentage of corn plants develop mosaic than is the case with wheat and certain other cereals. Also a much smaller number of varieties or types of corn than of small grains have been observed in the southern mosaic belt. Thus the chances are materially reduced for observing a wide range of mosaic types in corn, if such a situation actually exists.

Mr. McKinney and Mr. H. F. Stoneberg made a field trip by automobile from Baton Rouge to Houma, La. Several corn plantings were observed and mosaic was found in all but one in which the corn was nearly ripe. On the Southdown Plantation at Houma an unusually large number of corn plants showed mosaic on a good many of the older leaves as well as on the younger leaves. There was not the evidence of recovery from an early infection which is sometimes observed.

Aphis maydis, one of the vectors of corn mosaic, was exceedingly scarce in the corn fields, but in spite of that fact mosaic was found in some fields a considerable distance from mosaic-affected sugar cane.

Mr. McKinney spent a day at the A. & M. College of Mississippi and in near-by districts. While on a trip with Mr. H. H. Wedgworth, of the department of pathology, corn mosaic was found on a farm about 12 miles from the College. The portion of the field observed contained about one per cent infection. There was a small patch of mosaic-affected sugar cane near by.

John H. Parker, professor of agronomy at the Kansas State Agricultural College and agent in the cooperative investigations and experiments in the breeding and selection of wheat for resistance to stem and leaf rusts, has been granted the degree of Doctor of Philosophy from Cambridge University. The degree was conferred by proxy on June 16.

VISITORS

Luther Ko, a 1928 graduate in chemistry at the University of Illinois, visited the Office on July 10 to get information on the subject of wheat and to visit Department laboratories concerned with the quality of wheat.

H. W. Li, a graduate student of the department of plant breeding of Cornell University, taking work on the genetics of maize under Dr. R. A. Emerson, was in Washington on July 9, conferring with Dr. Ball and spending some time at Arlington Experiment Farm with Dr. Leighty and Mr. Richey.

W. S. Powell, a large wheat grower near Moro, Oreg., and a personal friend of Supt. D. E. Stephens, of the Sherman County Branch Station, was an Office visitor on Saturday, July 7. Mr. Powell, with his wife and two daughters, is making an automobile tour of the United States.

MANUSCRIPTS AND PUBLICATIONS

32 A manuscript entitled "Equality of Kernel Row Numbers in Reciprocal Corn Crosses," by F. D. Richey and H. S. Garrison, was approved on July 9 for publication in the Journal of the American Society of Agronomy.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins) (July 7)

The weather during all of June was unusually pleasant for this month. Relatively low temperatures obtained. The highest recorded was 91 degrees F. and only on three days did the temperature reach 90 degrees F.

The total precipitation for the month amounted to 5.39 inches. The greater portion of this was recorded during the first week. The precipitation for June, 1927, was 5.71 inches, and the average for the past 18 years was 4.55 inches.

Barnyard grass is rather abundant in fields of rice that were seeded in March and early April. In some areas the rice can not be seen for the grass. However, as a whole, the rice fields of southwestern Louisiana are much cleaner than in past years.

Work on the Station progressed favorably in June. All nursery rows and rice plots were labeled. Nursery rows were thinned to one plant in a place. The entire nursery was hoed and irrigated. Practically all the levees were cleaned. As a whole, Station work is further advanced than ever before at this season of the year.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg) (June 30)

Weather conditions have been favorable for the development of corn on the Station since planting time, April 3 to 24. The corn crop is about a week behind normal, because planting was delayed somewhat on account of cool and wet weather earlier in the season.

Corn in the breeding plots began tasseling and silking the first of the week. Selfs to continue for the best inbred lines, and crosses between selfed lines to obtain F_1 crosses for testing next year now are being made.

H. H. McKinney, pathologist in charge of cereal-virus-disease investigations, was a visitor at the Station for several days about the middle of June to take notes on the mosaic disease of corn. On June 19 and 20, we made a trip to Houma, La., inspecting fields of corn en route.

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins) (July 2)

The month of June has been unusually cool and rainy. Corn is doing well, however. At the present time it appears to be at least two weeks farther advanced than at the same time last year.

On June 12 I drove to Chicago and Milwaukee for a week. The corn here at Ames is further advanced than any that was seen along the way, either in eastern Iowa or northern Illinois.

A large number of county tours have visited the College and Experiment Station recently. There has been one nearly every day this month when the weather has been favorable and on some days there have been two or three.

Dr. C. R. Ball was a visitor at Ames on June 17 and 18.

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert) (June 25)

Dr. W. L. Burlison and Mr. C. C. Chapman, of the University of Illinois, were in Bloomington the forenoon of June 6 discussing plans and equipment for the low-temperature-injury experiments.

Dr. James G. Dickson and Miss Helen Johann, of the University of Wisconsin, spent the afternoon of June 11 at Bloomington observing the results from cooperative inoculation studies. Dr. Dickson returned on June 26 and we secured photographs of the outstanding results from inoculations with some of the more recently-recognized corn pathogenes.

Dr. E. E. DeTurk and Dr. Earl G. Sieveking, of the University of Illinois, were with us on June 22 to study the behavior of a large number of inbred strains to soil treatments with phosphate, potash, and nitrate. This project is being conducted in cooperation with the Department of Agronomy, University of Illinois. Some of the University of Illinois Soil Fields are being used again this year in studying the performance of several inbred strains and recombinations grown on soils with varying planes of fertility.

This year the inoculation and nutrition studies have been combined. Such an arrangement affords a better opportunity for correlation and interpretation of the final data.

Dr. W. H. Tisdale, pathologist for the E. I. Du Pont de Nemours and Co., Wilmington, Del., was in Bloomington on June 23 to study the results, observable at this period, in the seed-treatment experiments.

There are approximately 45 acres in experiment plots at Bloomington this year, not including the outlying plots nor those at the University or in the various University fields over the State.

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer) (July 2)

This June has been one of the wettest on record. According to figures just announced by the Government Weather Bureau here, 9.91 inches of rain fell during the month. This is approximately a quarter of the average rainfall for the year. It rained during 20 of the 30 days of the month, and over three times as much rain fell as during any other month of the year to date.

As a consequence many fields or parts of fields of corn and other crops have been submerged. Fields of corn all over the county have been retarded in development. Many of the plants less than 18 inches in height have been received at the laboratory because of the badly rotted condition which has developed.

The weed problem threatens to become of some importance unless the present trend of weather changes.

All in all, however, we believe that the corn still is ahead of the crop condition which prevailed last year at this time.

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains) (July 3)

In the eastern part of the country, the development of leaf rust of wheat has been very slow. On June 5, Prof. R. P. Bledsoe reported that wheat was ripening at Experiment, Ga., and that there was not enough rust to justify notes in the variety test. On June 10, the writer met Dr. C. E. Leighty at Knoxville, Tenn., and took notes on winter survival and leaf rust in the rust and breeding nurseries. Susceptible varieties were showing 35 to 50 per cent of leaf rust on the lower leaves in the uniform leaf rust nursery. The breeding nursery, which was further advanced in maturity, showed only a trace. Considerable septoria was developing on the lodged wheat. On June 27, Prof. Essary wrote that there had been very little further development of rust and that a few hot days had dried up the leaves.

On June 11, the seedings at Swannanoa, N. C., were visited. The replicated nursery on high land showed practically no leaf rust. On low land leaf rust was just starting to develop.

June 14 and 15, were spent in taking leaf-rust notes on various winter wheat seedings on the Arlington Experiment Farm. The uniform leaf-rust nursery showed only a moderate development of leaf rust, susceptible varieties being infected about 25 to 50 per cent. The early seedings in the agronomy plots showed a somewhat greater infection, susceptible varieties carrying about 50 to 100 per cent leaf rust.

At La Fayette, Ind., leaf rust has been developing slowly. Winter wheat in the leaf-rust nursery is very late in maturing, partly on account of weather conditions and partly because of thin stands. Blossoming which occurred from June 10 to 25 coincided with that of a number of spring-wheat varieties, making possible a number of crosses between winter and spring types. Crossing was accomplished under difficulties on account of the frequent rains.

In southern Indiana, Mr. Doak noted 50 to 75 per cent of leaf rust on susceptible winter wheats and 75 to 100 per cent on susceptible spring wheats in the rust nursery at Vincennes, Ind., on June 15. Wheat (mostly Purkoff) on low land along the Wabash River north to La Fayette showed 50 to 65 per cent. On high land to the east rust was somewhat less,- 30 to 50 per cent.

On June 21, very little leaf rust had developed on winter wheats at La Fayette. On spring wheats a trace to 15 per cent was showing on susceptible varieties. Susceptible varieties of barley were showing 100 per cent on the lower leaves. Mr. Leer noted a trace of leaf rust on wheat between La Fayette and Fort Wayne, Ind., on June 14 but did not find any north of Kentland on June 20. A trace to 5 per cent was showing in northern Indiana on June 27.

June has been an unusually wet month. It has rained 20 out of 30 days. The total precipitation was 9.91 inches. This has prevented cultivation of the corn-breeding plots, which are in a very weedy condition. A number of diseases apparently have been favored. Septoria leaf spot of wheat is very prevalent and apparently causing considerable defoliation. Reports of wheat scab have been received from a number of places in the State. In the leaf-rust nursery it is showing to a considerable extent upon a number of varieties of wheat and barley. One variety of oats is showing considerable infection with Helminthosporium.

Reports from the barberry eradication leaders of the various States indicate that there is considerable variation in the development of leaf rust of wheat. On the whole, however, leaf rust has been slow in developing and has not been severe. Ohio reported a trace of leaf rust of wheat from Franklin, Delaware, Knox, Summit, Ashland, Wayne, Cuyahoga, Lorain, Geauga, and Porter counties on June 2. Ten per cent was found in Ashtabula County on June 5, and on June 23 central Ohio was reported as having a trace, while northeastern Ohio showed 15 to 20 per cent. Illinois reported leaf rust of wheat general in the southern part of the State on June 16, with 50 per cent along the Wabash River. Low areas in Lawrence County showed 50 per cent on June 23, while only a trace was reported from Whiteside and Stark counties.

Wisconsin reported leaf rust as prevalent on June 23. On June 18, Minnesota reported leaf rust on winter wheat in Freeborn and Houston counties and at Red Wing. On June 25 it was found also in Otter Tail County. On June 23, Iowa reported heavy infection on wheat in Dallas County, a slight amount in Marshall County, and none in the northern part of the State. Nebraska reported leaf rust in every field on June 23 but not so severe as last year. South Dakota reported a trace to 3 per cent generally over the southeastern part of the State on June 23. North Dakota, on June 15, reported finding a trace on Kota wheat at Valley City and Fargo. Colorado reported on June 23, that leaf rust was very late, only a trace having been found.

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, ----------)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (July 2)

This country is experiencing a wet harvest. Wheat is dead ripe, and there have been but one or two days of harvesting weather. Wheat farmers need a week of dry weather.

The last seeding in the date-of-seeding experiment with varieties of grain sorghums and broomcorn was made on June 25. The soil was rather loose at seeding time and there were several rains before emergence, which caused a rather thick crust to form, but at present there appears to be a fair stand in spite of the unfavorable conditions.

Thinning, followed by cultivation, is progressing as rapidly as possible.

Maximum temperature for last half of June, 93 degrees on the 30th; minimum, 53 degrees on the 25th. Precipitation for the last half of June, 1.67 inches, or a total of 3.74 inches for the month. The precipitation was divided into three periods, which gave the impression of a wet month.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J.H.Parker) (July 3)

Harvesting of wheat rod rows in the nursery is done, and it is expected to spend the next few days in completing the harvest of several thousand individual hybrid plants, mostly the F_3 generation of back crosses of winter x spring hybrids, such as Tenmarq and Kanmarq, with Kanred.

The writer, in company with L. L. Davis, spent all day, June 30, and part of the following day at the Ft. Hays Branch Station looking over the wheat and barley experiments conducted by Mr. Swanson. Some interesting varietal differences in winter wheat and barley are apparent this year. Oro wheat appears very promising both at Hays and also at Manhattan. It has stiff straw, is resistant to bunt, and promises to yield very well. This Turkey selection seems to be very well adapted to Kansas conditions. Tenmarq wheat appears very promising at Hays, as well as at Manhattan and in the cooperative tests in some five or six counties which have been inspected this month.

In the barley plots at Hays, Vaughn seems to be a very promising variety. It is early, has stiff straw, and promises to yield well.

On July 2, a 40-acre field of Tenmarq wheat,--the first in Kansas--was examined in Brown County in northeastern Kansas. This is a wonderful field of wheat that promises to yield not less than 30 to 35 bushels to the acre. The president of the wheat department of a well-known milling company met us at this farm and arranged for the purchase of a carload of Tenmarq and a carload each of Turkey and Blackhull from the same shipping point. These lots of wheat will be milled separately, and it is hoped to arrange with a large baking company of Kansas City for some large-scale baking experiments. Thus direct trade opinion can be gained on the value of these varieties.

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston) (June 21)

The past two weeks have been marked by very heavy rains over much of Kansas and Oklahoma. Many severe wind and hail storms have occurred in this area, and there has been considerable crop loss from these causes as well as from high water. In general, however, the prospects for a large wheat crop in Kansas continue to be very good. Harvest is now in full swing in southern Kansas and northern Oklahoma, except where wheat is to be cut with the combined harvester. Cutting has been considerably delayed by heavy rains, however.

Stem rust has appeared in small spots in both the wheat and oat nurseries at Manhattan. While the spots are only a few square yards in extent, the infection seems to have been present for about three weeks in wheat and two weeks in oats. A fairly heavy infection of leaf rust of wheat developed late in the season, but only a trace of crown rust is present on oats as yet.

We have just completed taking leaf-rust notes in the leaf-rust nursery here. Sixteen hundred and thirty-four rows of winter wheat and about 200 rows of spring wheat were examined and classified. Kawvale (C. I. 8180), Hungarian (C. I. 3299-1M), and several selections from Texas proved to be highly resistant. Most other varieties were very heavily rusted. Many promising leaf-rust-resistant lines were found among head selections of crosses such as Kanred x Prelude, Kanred x Hard Federation, P1068 x Valley, Kanred x Fulcaster, and Kanred x Red Rock.

I received a report today of a farmer near Brewster, Kans., who has used an airplane in dusting two quarter sections of winter wheat with sulphur to control stem rust. This is the first report of the use of this method in Kansas and I do not know where the farmer received information regarding it.

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (June 27)

The rainfall recorded for the first 27 days of June is 9.05 inches and is the second highest in 60 years. Only seven of the 27 days for the month were free of rain. Consequently farmers in western Kansas are having difficulty in getting field crops cultivated. The over abundance of moisture is causing some concern as to how successfully combines can be used in harvesting one of the largest crops of wheat this section has ever produced.

Wheat is beginning to ripen to such an extent that a number of fields could be cut with binders if the fields were dry. Wheat will not be ready for the combines for at least a week or 10 days, unless the weather should be extremely hot and drying. All wheat is very well filled and should test from 60 to 62 pounds. There is some danger of shattering. Wheat is relatively free from lodging except in very low places or on well fallowed ground. Only isolated cases of primary infection of stem rust have been found, but a relatively light epidemic of leaf rust is quite common. The rust developed too late to cause any appreciable damage.

The writer, in company with C. O. Johnston, of Manhattan, and W. H. Walkden, of Wichita, made a trip by automobile from Hays to Colby to inspect crop conditions.

Because of unusual weather conditions a peculiar crop situation exists in the western third of the State. The late fall of 1927 was extremely dry so that much wheat failed to produce a sufficient stand to be left for a crop. This abandoned area was sown to either corn, barley, or spring wheat. Because of an unusually heavy rainfall this spring and summer all winter wheat which survived with a 50 per cent stand or more will produce satisfactorily. Very few fields with thin stands will yield less than 15 bushels to the acre. Many fields will yield from 25 to 30 bushels to the acre, and a few fields with good stands should run close to 40 bushels in yield.

Incidentally, the acreage of barley in western Kansas will run very high,--possibly above a million and a quarter,--due to the fact that a part of the abandoned wheat land was seeded to this crop. Practically all of the barley seen was of the Stavropol type. The writer has never seen a finer crop in the western part of the State. Many fields could easily yield from 35 to 40 bushels to the acre.

During the last few years Kansas has grown from 10,000 to 15,000 acres of spring wheat. One good authority told the writer that more spring wheat was planted in Kansas this spring, than had been planted altogether in the State during the last 10 years. Judging from the numbers of fields seen this statement is probably correct. Several carloads of Marquis spring wheat were shipped into western Kansas from eastern Colorado, Wyoming, and Montana to replace abandoned winter wheat. Because of an abundance of spring rain and cool weather the Marquis wheat crop is of considerable promise. It was found in the flowering stage on June 26 and was free of rust wherever examined. The crop will not compete with winter wheat which will soon be ready for harvest, but if cool weather continues to prevail the yield of Marquis should be 15 to 20 bushels.

Corn was found in good growing condition and the fields were relatively clean of weeds. However, warm weather would benefit the corn crop very much.

The writer visited the Foster Farms comprising approximately 30,000 acres scattered throughout the western part of the State. Nearly 7,500 acres are in small grains. The Fosters do not own a single combine but make a practice of harvesting all of their wheat either with binders or headers, except as they may contract to have a limited number of acres cut with a combine. When pressed for an explanation as to the preference for binders and headers the statement was made that the straw was too valuable for feed for livestock to be wasted, that they could get a better quality of grain for the market, and that they were able to enter their fields much earlier with binders and headers.

Large sales of combines have been made in Kansas this year. The latest report is that 50 machines have been sold this season from Hays alone. It is estimated that there are 18,000 combines in the State. Naturally, a great deal of the Kansas crop will be harvested by combines, but with the heavy rainfall throughout the entire State there is some apprehension as to how well the bumper crop can be handled by this system. Kansas is in need of a lot of dry weather just now.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague) (July 2)

The weather for the month of June and including July 1 was relatively cool and rainy. The precipitation for June totaled 4.86 inches, most of which came in small showers. The minimum temperature for this period was 44 degrees, the maximum, 93 degrees. The latter was recorded on July 1 and is the first temperature above 90 recorded this year.

The Annual Visitors' Day was held on June 27. Approximately 600 people were in attendance. One hundred and twenty-nine cars made the tour of the plats and nursery. All crops are in excellent shape, with the exception of corn which is slightly backward. Winter wheat is slightly lodged, but gives promise of good yields.

K. S. Quisenberry spent June 30 at the Substation. Other visitors in June were W. H. Brokaw, Director of Extension, and Prof. T. G. Goodding of the Agronomy Department, at Lincoln.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle) (July 7)

Cutworms have been comparatively bad in the experimental plots this season, and report of their damage to flax on local farms has been received indirectly.

On July 1, the greater part of 1.99 inches of rain fell in two storms of short duration. These heavy rains, which washed the soil down from about the plant stems, were accompanied by high winds which caused the smaller plants to lean. The bases of the stems were left exposed in ideal condition for the development of heat canker by the high temperatures which followed after the storms. Since conditions have favored weed development this season, much flax which was late in emergence was considerably protected from weeds.

Conditions of late have been ideal for the development of wilt in the susceptible varieties of flax.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (June 30)

The mean temperature during most of the days in June has been below normal. There have been almost no hot days during the month. During the latter half of the month cloudy weather prevailed until the 28th. The drought during the first half of June was broken by a long rainy period beginning about the middle of the month. Showers occurred daily for about 10 days, making the total for the month 3.55 inches, which is about 0.40 of an inch above normal.

All cereal crops, except corn, are in good condition. Corn needs more warm weather and sunshine. Early spring-sown grains are fully headed, and later varieties are beginning to head earlier than usual.

A number of crosses have been made between hardy winter-wheat varieties and wheat-rye hybrids received from V. H. Florell, Davis, Calif.

The last of the spring seeding was completed today in the date-of-seeding smut experiment in which smut-inoculated seed of five wheat varieties, ranging from practically smut immune to very susceptible, have been sown at 10-day intervals from May 1 to June 30. Records are kept of soil moisture and soil temperature during germination.

Neither leaf rust nor stem rust has been observed on any of the cereal crops thus far this season.

The Substation was visited recently by President J. L. Coulter of the North Dakota Agricultural College and by J. T. Sarvis, of the Northern Great Plains Field Station at Mandan.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (July 2)

During the last half of June it has rained on 10 of the 15 days. The rainfall for this period was 3.22 inches, and the total rainfall in June, 6.32 inches, or nearly three inches more than the normal for June. The total rainfall for the first six months of 1928 was only 8.36 inches. The average for this period during the past 14 years was 8.64 inches.

Plots of flax sown on April 21, April 30, and May 10 in the date-and-rate-of-seeding-and-tillage experiment are in bloom and look very promising. Flax sown on June 11 was up about June 18. The flax varietal plot and nursery seedings are making a very satisfactory growth.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (July 2)

The weather during the last half of June has been exceptionally favorable for all cereal crops. Temperatures have been cool and a heavy rainfall has been reported.

Wheat in the varietal plots has headed. The earlier oat and barley varieties in the plots also are headed. The nursery material is heading better than in any previous year.

Leaf rust of wheat was first found on the Station on June 23. Little Club and Quality were the first varieties found to be infected.

The difference between good and poor seed-bed preparation for cereal crops shows distinctly this year. Good seed-bed preparation resulted in better stands of wheat which now show promise of a good yield. Grain seeded on poorly prepared land has poorer stands and is very weedy.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (June 30)

The precipitation for the last half of June was 3.01 inches, bringing the total for the month up to 3.86. The normal for June is 3.22. The maximum temperatures for the last half of the month were 79 and 73 degrees on the 28th and 27th, respectively. The minimum temperatures were 32 and 38 degrees on the 17th and 18th respectively.

The rains came too late to benefit winter wheat greatly in some sections of the Basin, although many of the later seeded fields promise good yields. The yellowed condition of the early seeded fields was not overcome by the rains and a few fields are being plowed for fallow. Seedings made on the Substation after the first of September are making a good growth and are showing none of the yellowed condition. Spring wheat greatly benefited by the rains, and early varieties are beginning to head. Many farmers are anticipating trouble at harvest time, especially in late seeded fields, as the germination was very irregular and the grain is just emerging in places while the greater part of the plants are in the boot.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe) (June 30)

The cereal harvest was begun today. All grains are in good condition, and the yields will be above average.

Dr. V. F. Tapke, associate pathologist in cereal-smut investigations, arrived in Aberdeen on June 25 to conduct cereal-smut experiments.

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens) (July 7)

Cool, cloudy weather prevailed during the last half of June. There were only two days during the month, the 23rd and 24th, when the maximum temperature was higher than 90 degrees, the highest temperature being 94 degrees on the 24th. The total precipitation for the month was 0.52 of an inch, 0.45 of which fell on the evening of June 9. This precipitation and the cool weather which followed greatly benefited winter wheat.

Harvesting operations have begun in the northern portions of the Columbia Basin counties. Winter wheat on the Station is now being cut. We expect the yields to be from 30 to 35 bushels per acre for most varieties.

The Sixteenth Annual Field Day of the Sherman County Branch Station was held on June 25. About 175 farmers from Sherman, Wasco, and Gilliam counties inspected the Station. Director Jardine of the Oregon Experiment Station and a committee of the Board of Regents of Oregon Agricultural College were present. The following members of the Office were visitors at the Station in June: Dr. H. V. Harlan, Miss M. L. Martini, Dr. V. F. Tapke, Dr. H. B. Humphrey, Miss M. A. Griffiths, and Messrs. Clark, Quisenberry, and Coffman.

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (June 30)

The temperatures during the month of June were reasonably favorable for the growth of rice in California. The maximum temperature recorded at the Station was 106 degrees F. on June 6, and the minimum temperature was 52 degrees F. on June 21. During the month there were eight days with a maximum temperature of 95 degrees F. or above. The last 10 days in June were cooler than normal yet not cold enough to retard the growth of the rice crop.

The commercial rice fields appear to be about normal in stands and development.

The rice market remains quiet and there are approximately one and one-half million bags of the 1927 crop still on hand.

The following visitors registered at the Station in June: June 1, V. H. Florell, University Farm, Davis, Calif., G. A. Wiebe, Aberdeen Substation, Aberdeen, Idaho, and Mr. Brown from the Punjab, India; June 7, Dr. H. V. Harlan and Miss Mary L. Martini, of the Washington Office; June 15, Mr. C. B. Case, Burma, India; June 19, Dr. David Fairchild, Office of Foreign Plant Introduction, and J. E. Morrow, Supt., U. S. Plant Introduction Garden, Chico, Calif.

University Farm, Davis (Cereal Agronomy, V. H. Florell) (June 29)

Nursery threshing is in progress. The Coast selections, and varieties of barley and oats have been threshed. Threshing of the Fulghum oats is now the order of the day. Yields of the Coast selections are only moderately high. There is considerable variation, however, in degree of plumpness of kernel among them. Vaughn barley which is used as a check with the barley varieties is giving high yields again as in other seasons. Certain of the Flynn selections also are doing likewise.

Among the selections of Fulghum oats are several which are giving higher yields than the Fulghum check. The chances are good for the possibility to improve the present commercial Fulghum and Kanota in both yield and resistance to lodging.

The varieties of flax have been harvested and are ready for threshing. Good plant growth and good set of seed was produced in all varieties. Stands were somewhat variable and poorer in some varieties than in others.

Threshing of commercial fields of grain in the vicinity of Davis is still in progress, although most of the work is completed. Much of the winter-sown barley is pinched and more or less "shoe peggy" as a result of the high temperatures early in June.

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer (June 30)

Rain has retarded materially the progress of the survey for barberries during July, in Ashtabula County, Ohio. Rain has fallen continuously the greater portion of each day, for several consecutive days, in many parts of Ohio, during the entire month of June. At Columbus, there have been only a few rainless June days.

A trace of leaf rust on wheat is general over Ohio. A trace of leaf rust on rye has been observed in the northeastern part of the State. No leaf rust has been found on oats or barley up to the present time.

Dr. E. C. Stakman, University Farm, St. Paul, Minn., was a visitor on June 18. He had time to spend only a few hours in the field while here. Nevertheless, a trip was made via automobile from Columbus due west almost to the Indiana line and thence to Dayton. En route a few fields of wheat, oats, and barley were examined to detect the presence of stem rust. Not a single pustule of stem rust was found on any grain examined until a field of wheat on the J. W. Cowgill farm near Lewisburg, Preble County, was inspected. This field was excellently situated for stem-rust development. It was a low field within a few feet of infected barberries. Rust was just beginning to spread from the barberries to the wheat on June 18. This was the first uredinea of stem rust which had been found in Ohio this year.

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell (June 26)

Field operations in barberry eradication in Wisconsin will be in full swing by July, when the field force will number 28 men.

Preceding field scouting in July new men, as well as experienced men, will attend a scout school and conference at Madison on July 2. They will spend July 3 in the Black Earth area of escaped barberries where local rust spreads from barberries are becoming evident and will make ideal material for study. New methods of scouting and eradication will be emphasized.

Rust on barberries and on grains and grasses has been very late. The first stem-rust infection in the State was found on Agropyron repens on June 14. So far the only infection on grains was that found on June 23 on rye near barberries in the Black Earth area of escaped barberries.

Stem rust has not as yet been found except in close proximity to barberries. So far five cases of rust spread from barberry to grains and grasses have been located.

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L.W.Melander (July 5)

The survey for the last half of June progressed rather slowly. Several rainy days hindered the scouting of heavily wooded and underbrush areas. In Hennepin County, in the district around Lake Minnetonka, many small bushes are being found which have arisen from seeds scattered from numerous planted bushes destroyed early in the campaign. The intensive survey method is being used in Hennepin, Carver, and LeSueur counties. This method takes considerable time and labor but it is worth while. Freeborn County has been completely resurveyed. Former plantings and adjacent woodlots were scouted. To survey beyond would have involved practically a third survey of this county. One small area of escaped bushes was found.

The weather at present is very favorable for stem rust which is developing rapidly. A spread of stem rust from barberries to wheat, barley, and Hordeum jubatum was found in Elysian township, LeSuer County. A trace of stem rust on usually resistant winter wheat was found near barberries in Freeborn County, but no rust was found on Agropyron repens near these bushes. Several locations of stem rust spreading from barberry to Agropyron repens were observed. No spreads of stem rust from barberry to oats have been found.

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel (June 20)

Stem-rust damage to winter wheat is not considered probable this year. Observations were made in a large number of fields in eastern Nebraska and northern Kansas during the past four days and only a few scattered pustules were found. Near Virginia, Nebr., a single barberry bush was found lightly infected with the cluster-cup stage of stem rust. From this bush rust had spread about 150 feet in a winter-wheat field adjacent to the barberry bush. This was the only place where stem rust had been found on winter wheat in Nebraska to date.

A trace of stem rust not directly traceable to barberries was found at Belleville, Minneapolis, and Abilene, Kansas. In this part of Kansas the winter wheat which is not already harvested is no longer susceptible to stem rust.

Records on the first appearance of stem rust in Nebraska have been kept since 1921. For the past seven years stem rust usually has been found during the first week in June. Its scarcity at this time of the month would indicate that there will be little, if any, damage to our cereal crops.

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue (June 21)

Appointments have been requested for 22 men who will begin field work July 2. Dr. C. R. Ball addressed this personnel on June 8. They will convene at the State College for a conference on June 30 and leave for their respective field stations in the early forenoon of July 2. The personnel will be divided into squads of four or six men, one of whom will be the squad leader.

Between now and July 2, the State Leader and two or three men will be in the field all of the time, making field observations, conducting demonstrations at county fairs, checking leads to barberries, doing reinspections, and making contacts with leading farmers and business men especially in the counties where the surveys will be carried on this season.

This season, second surveys will be conducted in Adams, Kidder, and Pierce counties; resurveys in Grand Forks and Traill counties; and original strip scouting along the James River, beginning at Jamestown and working south toward the South Dakota line.

Dr. C. R. Ball was in North Dakota from June 4 to 9. He accompanied the State Leader on a field trip from Fargo west to Bismarck, north to Minot and Kenmare, east to Mohall, Bottineau, and Cando, and back to Fargo via Devils Lake, Lakota, Cooperstown, and Valley City, covering a little more than 1,100 miles. He addressed the annual convention of the North Dakota Retail Merchants Association at Minot on June 6.

The first infected barberries of the season were located on June 13, one and one-half miles northwest of Granville, McHenry County. These bushes carried a moderate to heavy aecial infection. No rust spread could be traced from that planting. To date no stem rust or leaf rust has been located.

The drought and cold weather of May retarded the crops. Generous precipitation, however, over all of North Dakota since June 7 has relieved greatly the crop situation which was becoming acute in some sections of the State. At the present writing the crop is in very good condition with indications of a crop which will equal that of last year.

MONTANA

State College of Agriculture, Bozeman, W. L. Popham (June 28)

A severe epidemic of stripe rust (*Puccinia glumarum*) is present in the lower Flathead Valley, in Flathead County. A 100 per cent infection was found in 14 fields of Velvet Chaff wheat examined on June 26. Red top (*Agrostis alba*) also was found to be heavily infected, and a trace of stripe rust was present on hull-less barley. At the present time wheat is in flower. Hard red winter wheats show considerable immunity in this locality, as not more than a trace of stripe rust could be found in any fields examined. Only a trace of leaf rust was found on either winter or spring wheat and no stem rust has developed.

Four men are now carrying on barberry eradication in Granite and Ravalli counties. Many seedlings are being found again this year, furnishing further evidence that soil and climatic conditions in the western valleys of Montana are more favorable for the spread of barberries than the conditions governing central and eastern Montana.

Common barberry bushes under observation in Montana during the spring and early summer indicate that no stem-rust infection occurred on barberries in western Montana this year.

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren (June 20)

During the first part of June the field men were making the second survey in Weld County. Several new properties having escaped barberry bushes were found. As yet the river area of the county has not been surveyed. This will be done the latter part of this month. It is believed that the river area in Weld County will be found to be infested with escaped barberries, particularly near Loveland and Fort Collins.

The barberries which have been found this year in the river territory, both in Larimer and Weld counties, have been heavily infected. As yet, no stem rust on cereals or grasses has been found, evidently because of the cool weather that has prevailed since the latter part of May.

Only a trace of leaf rust has been found so far and this appeared much later than was the case last year.

Last week the State Leader, accompanied by J. Wayne Reitz, made an inspection trip throughout southern and southeastern Colorado. On this trip editors of newspapers were interviewed and given stories of barberry eradication for publication. The editors showed a fine spirit of cooperation in this publicity.

Grain in the southern part of the State has all headed out, winter wheat being in the milk stage. Stands were excellent. No stem rust could be found at that time.

(July 5)

Second survey is progressing very nicely in Weld County. In June 506 barberry bushes and seedlings, many of which were infected, were found in this County. Practically all of the bushes which were found had escaped from cultivation. Four large barberries were found just over the Larimer County line along the Poudre River in Weld County.

As yet we have been unable to find any definite rust spreads from common barberries. This apparently is due to cool weather during most of the month of June. A bare trace of stem rust was found in extreme eastern Colorado. The grain will escape rust damage because it is ripening very fast. We have been unable to find any stem rust in the irrigated section. The grain here also is far enough along to escape much damage.

On Monday, July 2, the annual conference for field men and cooperators in barberry eradication was held. Following the conference the men took up their work again in the field and will be out in their respective counties for the remainder of the season.

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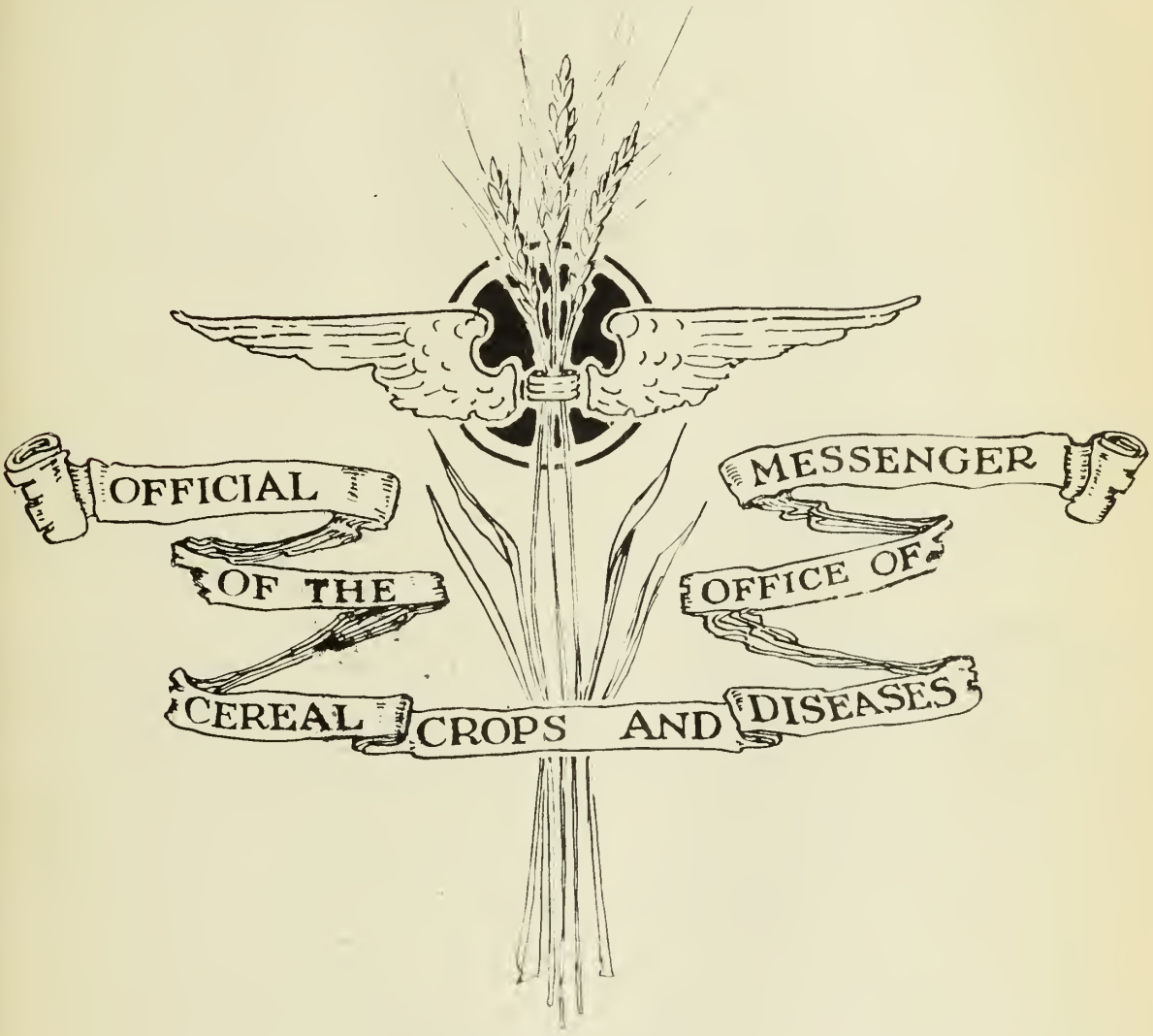
CEREAL COURIER



BUREAU
OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 17

July 20, 1928
Personnel (July 11-20) and Field Station (July 1-15) Issue

PERSONNEL ITEMS

Mrs. Edna T. Basart was appointed clerk-stenographer, effective July 20, to succeed Miss Florence M. Hanson in the office of the State Leader of barberry eradication in Iowa.

A. C. Dillman, associate agronomist in charge of flax investigations, who left Washington on July 4 for St. Paul, Minn., to study flax varieties in the classification nurseries, wrote from Bozeman, Mont., on July 15 that he had left St. Paul on July 12 and had spent the 13th at Fargo, N. Dak., and the 14th at Mandan. Small grains and flax were found in excellent condition at Fargo. Stem rust had appeared on wheat to a slight extent. Flax rust was quite widely distributed among the varieties in plots sown on May 10 in Mr. Stoa's varietal experiments. The rust is liable to do some injury before harvest, as the plants still are in bloom and will require about four weeks to reach full maturity. The flax was in excellent condition, aside from the rust. In another field, Mr. Boyle called attention to some injury to flax plants in the nature of "tip burn." This had occurred on young plants 10 to 16 inches high and was most common on the young growing tips and on flower buds just before the blossoming stage. About 10 per cent of the plants were affected in parts of the field with something apparently of a physiological nature. However, Mr. Boyle has tagged many plants in order to see whether they will recover or if some organism can be found.

Small grains were in good condition west of Fargo as far as Jamestown. Some fields of barley were beginning to yellow. Flax looked very promising, as it was more free from weeds than usually is the case.

At Mandan the crops on the Northern Great Plains Field Station give promise of excellent yields. The wheat nursery is excellent, as are the flax nurseries. No stem rust has been found so far (July 14). Abundant rains have wet the soil in fallow and corn plots to a depth of six feet at least, the depth of soil sampling. A field of "squaw corn" on the river flats was tasseled but was not yet shedding pollen.

The earliest varieties of flax in the nurseries were just beginning to blossom, therefore Mr. Dillman will return to Mandan later to take notes on the varieties.

The early drought evidently had done injury to winter wheat in eastern Montana. East of Billings a few fields were seen that were fully ripe and one that was in the shock.

Dr. H. B. Humphrey, principal pathologist in charge of cereal-rust investigations, wrote from Sioux Falls, S. Dak., on July 13, that on the preceding day he and Mr. Fletcher, of the Conference for the Prevention of Grain Rust, had left Minneapolis by a southwesterly route through Jordan, Mankato, St. James, Windom, and Luverne, Minn., to Sioux Falls. Dr. Humphrey writes: "We inspected fields every few miles and found some stem rust in all of them. The situation now as compared to that of last year is much less alarming. However, some damage could result should favorable rust weather prevail for a few days. During the past five days, northwest winds have prevailed and the weather has been optimum for the proper filling of the grain. Ten days more and most of the spring wheat here and in southern Minnesota will be ready to cut."

"The crop prospect in general is very good, though winter wheat suffered considerable winter injury. Barley and oats will yield better than last year and corn is coming along by leaps and bounds. It is now tasseling out."

Dr. A. G. Johnson, principal pathologist in charge of cereal-disease investigations, will leave Washington on July 24 for southern Alabama, where he will take notes on diseased corn fields. He will return to Washington in about 10 days.

C. H. Kyle, senior agronomist in corn investigations, returned to Washington on July 13 after an inspection of the cooperative corn experiments at Baton Rouge, La., and Knoxville, Tenn. The weather at Baton Rouge was very hot, but the experimental plots of corn were the best ever obtained; the crop was practically assured at the time Mr. Kyle left. At Knoxville, corn was a little later than last year but looking very well. In general, corn and cotton in the region visited by Mr. Kyle were very poor.

Dr. C. E. Leighty, principal agronomist in charge of eastern wheat investigations, left Washington on July 20 for Ithaca and other points in New York State to confer with cooperators and with officials of Cornell Agricultural Experiment Station regarding the cooperative wheat experiments and inspect fields of Forward and Honor wheats grown at various places in the State. These wheats were developed in connection with the cooperative plant breeding work at Cornell. Dr. Leighty will be away about 10 days.

Dr. J. H. Martin, associate agronomist in charge of grain sorghum and broomcorn investigations, will leave Washington on July 24 on a three months' trip in western States. In North Dakota and Minnesota he will conduct experiments in and observe methods of harvesting of cereals. At Sacaton, Ariz., he will conduct physiological experiments with grain sorghums. He will take notes on experiments with grain sorghums and broomcorn at cooperative field stations at Shafter, Calif., Sacaton, Ariz., Tucumcari, New Mex., Akron, Colo., North Platte, Nebr., Manhattan and Hays, Kans., Woodward and Lawton, Okla., and Dalhart and Big Spring, Tex. Dr. Martin also will conduct a survey of farm practices in growing broomcorn in Oklahoma, Kansas, and Illinois.

M. A. McCall, principal agronomist in charge of the agronomic section, left Washington on July 16 for a two weeks' trip in Minnesota, South Dakota, and Wisconsin, to confer with officials of agricultural experiment stations, cooperative agencies, and Office employees in regard to cereal experiments.

Prof. L. E. Melchers, head of the department of botany and plant pathology, of the Kansas Agricultural College, who is on a year's leave of absence in Egypt, sent greetings from Cairo on June 14, desiring to be remembered to his Washington friends and asking them to picture him on a camel in the Arabian desert about 120 miles from a railroad,--an experience which he had had recently on a collecting trip.

The following State Leaders in the western division of the barberry-eradication area will start from Omaha, Nebr., on August 6 on a combined field trip and conference: J. W. Baringer, R. W. Bills, R. O. Bulger, R. M. Caldwell, E. A. Lungren, G. C. Mayoue, L. W. Melander, W. L. Popham, P. W. Rohrbaugh, and A. F. Thiel. They will be accompanied by Dr. C. R. Ball, principal agronomist in charge, L. D. Hutton, associate pathologist in charge of barberry eradication, Dr. E. C. Stakman, University Farm, St. Paul, Minn., and J. L. Richardson, agent in charge of publicity.

The party will travel by automobile through eastern Nebraska, Iowa, northern Illinois, southwestern Wisconsin, Minnesota, eastern North Dakota, and eastern South Dakota, to make an inspection of the field problems and progress in the western division of the barberry-eradication area. The trip will be of about two weeks' duration.

VISITORS

Dr. Th. D. Likhonos, horticulturist in the Institute of Applied Botany, Leningrad, U. S. S. R., who has spent the last six months in Italy, came to the Office last week to bring greetings from Prof. N. I. Vavilov, Director of the Institute, and to go over experiments in crop physiology. Dr. Likhonos plans to spend about six months in America and to work with Dr. U. P. Hedrick, horticulturist and vice director of the New York State Agricultural Experiment Station at Geneva, N. Y. Dr. Likhonos also expects to spend a portion of his time in studying the fruit industries in California.

Dr. Adrian Recinos, envoy extraordinary and minister plenipotentiary from Guatemala, came to the Office on July 20 to consult Dr. Ball regarding the possibility of obtaining wheats suitable for experimentation in the high lands of Guatemala.

Davis W. Weaver, Jr., of Nineveh, Va., who has recently taken his master's degree in chemistry at the University of Delaware, was an Office visitor the past week.

I M P O R T A N T

B.P.I.Memo.366

July 19, 1928

MEMORANDUM FOR HEADS OF OFFICES

Gentlemen:

It appears desirable and necessary to again call the attention of heads of offices to the necessity of securing approval in advance of letters of authorization covering contemplated travel. Not only should the letter of authorization be secured in advance of a contemplated trip, but the individual concerned should have the letter in his possession and thoroughly familiarize himself alike with the amount of money covered by the letter and the terms of the letter. Much difficulty with accounts would be avoided if this practice were carefully followed. In the case of an emergency, an explanation will be necessary, with a clear justification of the necessity of antedating a letter of authorization. In the absence of adequate explanation, the letter will become effective on the date of approval.

Very sincerely,

WM. A. TAYLOR

Chief of Bureau.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (July 17)

Harvesting and threshing of the small-grain plots is about completed. The weather was favorable for both operations. The yields of all four small-grain crops on an average basis will be low. Winter injury or killing probably is the principal reason for the low yields. Farther south in Virginia high yields of wheat are reported, while to the west in Maryland and Virginia farmers report a poor wheat crop.

No winter-barley variety appeared to be outstanding in resistance to cold injury. As measured by yield, certain varieties (Tennessee Beardless No. 5 and No. 6, Esaw, and Alaska) made a decided recovery from the vegetative injury received in January. These varieties showed more pronounced cold injury than Wisconsin Winter, C. I. 2159, or the Tennessee Winter types which they outyielded.

The yields of the winter-barley varieties grown in duplicate 40th-acre plots for the crop year of 1928 are presented in the following table:

Grain yield obtained from duplicate 40th-acre plots of winter barley, and the comparison of the variety yield with the average yield of the nearest check plot, grown at Arlington Experiment Farm in 1928

Variety	C.I.No.	Variety Yield (Bu. per Acre)	Check Plot Yield (Bu. per Acre)	Gain or loss of variety from check (Bu. per Acre)
Han River	2163	29.6	26.4	+3.2
Wisconsin Winter	2167	29.4	26.4	+3.0
Alaska	4106	32.6	29.8	+2.8
Esaw	----	34.1	32.0	+2.1
Tennessee Winter	257	30.0	28.8	+1.2
Tennessee Beardless No. 6	2746	32.3	31.5	+0.8
Do No. 5	3384	32.3	31.5	+0.8
Scottish Pearl	277	27.3	28.8	-1.5
Pidor	901	24.8	26.4	-1.6
Tennessee No. 52	3543	28.2	29.8	-1.6
Tennessee No. 12	3534	30.0	32.0	-2.0
Mechanical Mixture	4115	29.2	31.5	-2.3
Tenkow	646	26.5	28.8	-2.3

Continued

Variety	C.I.No.	Variety Yield (Bu. per Acre)	Check Plot Yield (Bu. per Acre)	Gain or loss of variety from check (Bu. per Acre)
Tennessee No. 61	3545	29.6	32.0	-2.4
Tennessee No. 66	3546	28.2	32.0	-3.8
Orel	351	24.2	31.0	-6.8
Composite Cross	4116	21.9	31.5	-9.6
Nakano Wase	754	19.6	29.8	-10.2
Wisconsin Winter[1/]	2159	30.2	----	----

1/ Average yield of 11 check plots.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg) (July 15)

The hand-pollinating season has been in full swing during the first half of July. Approximately 6,000 hand-pollinations have been made. The weather conditions have been ideal for the work. Rains occurred on July 7 and 9 with a rainfall of 1.8 and 0.8 inches, respectively. These rains came at a time when the plants needed moisture in order to produce a maximum crop. The maximum daily temperatures have been well above 90 degrees every day this month. The highest temperature (97 degrees) was recorded on July 2 and 15.

C. H. Kyle, senior agronomist in corn investigations, was at the station from July 4 to 9.

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L.J.Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett) (July 18)

Winter-wheat harvest on the plots at Ames began on July 16. A few of the nursery rows were cut last week. We hope to have the nursery cut before the end of the week.

Oats are down badly and are not ripening uniformly nor rapidly. On a trip to Mason City, Iowa, and Waseca, Minn., we found that this was only a local condition and that a crop above the average is on the land throughout the northern half of the State.

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins) (July 16)

Corn in this vicinity still is about a week further advanced than at the same time last year. Today we are making a number of our first selfs in the earlier strains of corn. Last year we made our first pollinations on July 22.

A severe hailstorm, on the night of July 12, hit the corn-breeding experiments just south of the agronomy farm but did no damage. However, a field of corn just across the fence to the south, was almost completely destroyed. Corn and small grain on some of the soil fertility experiments were severely damaged.

The temperature for the first half of July has been several degrees above normal. This and the fact that we have had plenty of moisture, should combine to make the selfing very satisfactory this year. Dry weather just before the shoots appear, seems to materially delay silking but does not have as much of an effect on tasseling. In some seasons many of the plants shed all of their pollen before any silks appear. This, of course, seriously interferes with selfing.

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, ----------)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (July 16)

So far July has been favorable for sorghum growth; there have been several showers, high temperatures, and lots of sunshine. At present wheat is practically all harvested, either by header or combine. Yields are as good as or better than expected before harvest.

The thinning of sorghums was completed a week ago and the roadways are being discarded. Plant stands also are being counted. Because of the warm moist weather, both sorghums and weeds are making rapid growth.

Maximum temperature for July to date, 102 degrees on the 4th; on two days the temperature was 101 degrees and on another 100 degrees. The minimum temperature was 62 degrees on the 13th. Precipitation, 1.14 inches, which was recorded from five showers.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J.H.Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (July 17)

The rainfall for the first half of July was light, but cloudy, damp days have interfered greatly with the harvesting of wheat by combines. Many farmers throughout western Kansas found it necessary to resort to headers and binders in order to save one of the largest crops on record. About two-thirds of the crop is harvested in this section of the State. The harvest is approximately two weeks later than usual.

All of the harvesting has been completed on the Cereal Project. The nursery threshing will be completed in another half day.

A small Baldwin-Gleaner combine mounted on a two-ton Holt tractor was successfully used in harvesting 1/10 and 1/50-acre plots on the Dry Land Project and on the Cereal Project. The machine was assembled at the Station shops under the direction of Supt. Aicher and Mechanic Kennedy. A 50th-acre plot can be harvested and threshed in two minutes with greater ease and less waste than by any other method known. The Baldwin-Gleaner combine is particularly good in handling plots of lodged or tangled straw. It is believed that the combine method of harvesting cultural plots will be found to be a very expedient way of handling experimental work of this kind. The combine can not be used in harvesting varietal plots where pure seed is desired.

Yields of wheat will run from 30 to 50 bushels to the acre this year. The highest yield on the Cereal Project so far has been obtained from a moderately pastured plot on fallow. The yield will run 50 bushels to the acre judging from the sacked grain obtained.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague) (July 16)

The weather of the first half of July has been slightly cooler and more cloudy than usual. The maximum temperature for the period was 96 degrees. This maximum was reached on three days, namely, the 6th, 7th, and 10th. The minimum for the same period was 55 degrees on July 12. The precipitation for July has totaled 1.21 inches.

The winter-wheat varieties were harvested on July 13. The nursery material is somewhat later but cutting is well under way. All of the barley nursery has been harvested. Due to heavy rains all nursery material made a heavy growth and considerable lodging occurred.

Corn is growing very rapidly and early varieties will be in tassel in a week. With continued favorable conditions, a good yield should result.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (July 17)

The rainy weather that began about the middle of June continued until the 10th of July. A total of 3.06 inches of rain has fallen this month to date, almost equaling the rainfall for June, both of which were above normal for those months. A measurable amount of rain fell on 17 days in June and on 8 days in July up to this time.

As a result of the rains the crops have made a remarkable recovery from the effects of previous drought, and with continued favorable conditions good yields should be obtained from all cereal crops except perhaps winter rye. Contrary to the usual condition, the earliest sown crops do not appear so good as those sown somewhat later owing to the greater drought injury with the earlier crops.

The mean temperatures this month have been somewhat below normal, but a few hot, sunny days have caused the corn, which was rather backward, to make a vigorous growth. The maximum temperature was 91 degrees on the 15th and the minimum, 48 degrees on the 9th.

No stem rust has been observed yet. Leaf rust appeared about the last of June on winter wheat. A trace is present on susceptible spring varieties. More than the usual amount of black chaff is present on several spring-wheat varieties.

Preparations are being made for the annual Substation picnic which will be held on July 20.

On a recent auto trip through part of Stark and adjoining counties it was noted that spring wheat is still the prevailing crop, and in the localities observed exceeds in acreage that of all other crops combined. More than 90 per cent of the wheat fields seen apparently were Marquis. The numbers of fields of the cereal crops counted in a trip of about 90 miles were as follows:

Spring Wheat	Oats	Barley	Rye	Corn	Flax	Winter Wheat
94	21	17	9	11	6	0

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (July 17)

The weather during the latter half of July has continued favorable for cereal crop growth. Temperatures have been comparatively cool. There has been a total rainfall of 2.96 inches for the 15 days.

Wheat, oat, and barley varieties in the plots and the wheat varieties in the nursery have made a good vegetative growth. All varieties are now fully headed and the earlier ones are beginning to ripen.

Stem rust was first found yesterday, July 16, on the Hard Federation border rows of the nursery. Leaf rust has spread quite generally over the wheat varieties but there is not a heavy infection. There is a heavy infection of black chaff which threatens to injure some of the more susceptible varieties and strains.

J. Allen Clark, senior agronomist in charge of western wheat investigations, was at the Station yesterday and today.

MONTANA: Judith Basin Substation, Moccasin (Cereal Agronomy, B.B.Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe) (July 17)

Harvesting of the cereal plots will begin within 10 days. Good yields will be realized from all the cereals.

The county agricultural agents of southeastern Idaho met in conference at the Substation on July 14. Dr. H. V. Harlan gave an illustrated lecture of his trip through northern Africa and Abyssinia. In the afternoon the work of the Aberdeen Substation was explained to the county agents.

Dr. A. J. Pieters of the Office of Forage Crops arrived on July 15.

Dean E. J. Iddings of the College of Agriculture, Moscow, Idaho, visited the Substation on July 16.

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (July 16)

The weather of the first half of July has been favorable for the growth of the rice crop.

The Station rice looks fairly well. The earliest date of seeding in the date-of-seeding experiment by continuous submergence, looks better than the plots sown later. In the nursery the earliest variety sown began to head on July 9, or about 63 days from the date of the first irrigation.

On July 7, I made a short trip through parts of the rice area in Butte, Glenn, and Colusa counties. In each of these counties I saw a few commercial fields with good stands of rice and but little foul growth. However, many fields were observed with thin stands of rice, in which cat-tails, sedge, arrow head, water plantain, and water grass were quite thick. The best rice seen was in Butte County.

Water plantain has increased rapidly in the rice fields during the past two years. This weed is often quite thick even in rice fields on which there is a good stand of rice. This weed is now in bloom, and it, combined with water grass and cat-tails, makes many of the old rice fields look like weed patches at this time.

The California Cooperative Crop Reporting Service estimates that there are 136,000 acres sown to rice this year compared with 160,000 acres harvested last year. The condition of the crop is 82 per cent of normal compared with a 10-year average of 88.5 per cent. The condition of the crop indicates that the production will be about 3,010,000 100-pound bags, whereas last year over 4,000,000 bags were harvested.

The rice market remains quiet, and the supply of paddy in the growers' possession is moving to market very slowly.

University Farm, Davis (Cereal Agronomy, V. H. Florell) (July 16)

Threshing of the nursery will be completed in a few days. The comparative experiments of varieties of barley, wheat, and oats have been calculated.

The grain yields of leading varieties and strains, including leading commercial varieties for comparison, are presented in the following tables:

WHEAT[1/]

Variety	C.I.No.	Calif.No.	Average Yield (Bu. per Acre)	Rank
Onas	6221		47.4	1
Federation	4734		45.9	2
White Federation	4981		45.7	3
Little Club x Fretes	----	1921 B	45.5	4
Escondido	8240		43.6	5
Blé noir x Hard Federation	----		43.0	6
Defiance No. 4	----		41.6	7
Bunyip	4166		41.3	8
Baart	1697		41.4	9
Little Club x Clarendon	----	A 367-2-1	40.5	10
Hard Federation[2/]	4733		37.2	17
Sonora	3036		33.2	24
Pacific Bluestem	4067		29.0	30

1/ 41 varieties in experiment
2/ Average of 44 check rows

BARLEY[1]

Variety	C.I.No.	Calif.No.	Average Yield (Bu. per Acre)	Rank
Vaughn Selection	1367-5		70.4	1
Do	1367-1		69.3	2
Coast Selection	----	268-b	67.3	3
Vaughn[2]	1367		63.4	4
Cape x Coast	----	1527	63.2	5
Tennessee Winter x Hero	----		62.3	6
Vaughn Selection	1367-2		61.3	7
Do	1367-3		61.2	8
Sacramento	----	1511	60.9	9
Sacramento x Hero	----	27-1-563	60.4	10
Coast	690		45.3	22
Atlas	4118		27.6	30
Club Mariout	261		25.9	33

1/ 35 varieties in experiment
2/ Average of 35 check rows

OATS[1]

Fulghum x Swedish Select	----	1015 A 2-1 B	71.0	1
Burt Selection	6076-16		70.4	2
Avenae Creme	----		68.0	3
Lachlan	----	983	66.6	4
Kanota	839		64.8	5
Fulghum[2]	708		64.6	6
Burt	916		62.6	7
Wilga	---		62.2	8
Burt Selection	6090-6		61.8	9
Fulghum x Swedish Select	----	1015 A 1-23-1 B	59.4	10
California Red	----	1003	55.1	12

1/ 26 varieties in experiment
2/ Average of 28 check rows.

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs) [July 12]

The 6,200 rod rows in the smut nursery at Davis have been harvested. This involved classifying and counting about a quarter of a million plants in connection with the study of the inheritance of resistance to bunt, Tilletia tritici. The bunt infection again was quite satisfactory. Such wheats as Martin, Hussar, Ridit, and White Odessa continued to show no bunt infection in the nursery, while in such susceptible wheats as White Federation, Baart, and Little Club 80 per cent or more of the plants were attacked. Hope wheat, which was in this nursery for the first time, had about one per cent of bunted heads.

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer (July 15)

Thirty-four field agents are now on our payroll. Twenty-eight of these men are doing intensive first survey in Ashtabula County. The other six are doing intensive second survey in Preble County and are all in one squad with headquarters at New Paris, Ohio. Squads of six men each are located at the following places in Ashtabula County: Rock Creek, Orwell, and Andover. A squad of five is at Ashtabula and another squad of five is at Jefferson. It is hoped that the first survey of Ashtabula County can be completed this year, but at the present rate of progress this seems doubtful.

On July 2 and 3 an intensive training course was held in connection with a field trip through Geauga and Ashtabula counties. A demonstration treatment of barberries with salt was held near Hartsgrove on the afternoon of July 3. The trip and discussions were of particular benefit to the new men, but the experienced agents were also able to absorb some new ideas pertinent to the work at hand.

Leaf rust on wheat is general and is moderate to heavy in severity all over Ohio. Leaf rust on oats is spotted in distribution and in places where infection occurs is light to moderate in severity. Leaf rust has been found on rye in Ashtabula County only. No leaf rust has been found on barley to date.

Stem rust on wheat is general in the southern and western parts of Ohio. In the southern portion of the State the infection is very light. In central western Ohio it is severe in local areas. This is particularly true in Preble, Mercer, and Auglaize counties. No stem rust has been found on oats to date. A trace of stem rust was found on barley in Mercer County on July 11. Stem rust has been reported recently spreading from barberries to rye in Preble County.

The weather during the past six weeks has been excellent for rust development. A large part of the wheat and rye in southern Ohio has been cut and has escaped stem-rust damage. Wheat is being cut in central Ohio. Apparently rye and barley are going to escape material damage from stem rust. Oats are ripening rapidly in southern Ohio.

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer.

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy.

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell (July 14)

On July 2 the complete force of 28 barberry-eradication field men of Wisconsin reported at Madison for a scout school and conference. Following the school, the men were assigned to their territories in Dane and Rock counties. After the completion of the second survey in Rock County, the men will begin work in Grant County and later in Sauk County.

Stem-rust development has been very slow on the grains thus far this season. Most of the rust reported has been in close proximity to barberry bushes. Careful search in many fields away from barberries had not revealed rust prior to July 7.

Near barberries the rye and the grasses, Hordeum jubatum, Agropyron repens and Agrostis alba, have been quite heavily infected.

The stem-rust situation is unusual in that rust spreads have remained very distinctly localized about barberry bushes. Twenty-nine rust spreads, mainly to rye and grasses, have been found to date.

Crown rust of oats has made considerable development in the southern portion of the State, especially about buckthorn bushes which are widely disseminated in this region. Several very impressive local spreads of this rust were observed on July 12. In these cases the crop had been considerably damaged.

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills [July 16]

Three counties of southern Illinois,- Lawrence, Richland, and Clay,- have been covered by a complete first survey. A few planted bushes were found in each county. In only one instance were escaped bushes found. These were around the edge of a stone quarry close to a farmstead where bushes had been planted.

The entire force is now conducting second survey in northern counties. The agents have found bushes each day since beginning in Ogle County.

Another interesting case of a boy's identification of common barberry as a result of educational work in the high schools of Illinois has been reported.

Theodore Rocky, a sophomore in the Dakota (Ill.) High School, heard a lecture on barberry eradication given by Mr. L. H. Corbin in April, 1928, and he also studied in his agricultural classes about barberry and its detrimental effect upon the small-grain crops which grow near by.

A few weeks after hearing the lecture, he was visiting on the farm of his brother. While playing ball in the yard, one of the smaller boys fell against a large, thorny bush and scratched his arm. Remembering that barberries are thorny, Theodore suspected that this might be one of the outlawed shrubs. He had been told that one of the ways to identify barberry was by its inner bark. He used a baseball bat to knock off the bark to inspect the color of the inner bark and found that it was yellow. Then a close inspection of the leaves and thorns convinced him that here on his brother's farm was one of the very pests about which he had studied and heard so much.

He took a twig of the bush for positive proof to his agricultural instructor, who reported it to the barberry-eradication office.

Mr. Corbin returned to Dakota and young Rocky went with him to destroy the bush. Three hundred and ninety pounds of salt were used to insure its destruction.

IOWA

Iowa State College, Ames, P. W. Rohrbaugh (July 16)

Harvest is in full swing in the southern half of the State at this writing. Very little rust is to be found except near barberries. At a number of places rust has spread from barberries into the grain and caused a fairly heavy infection in small local areas. Rust can not be found in the northern part of the State away from barberries, without considerable time being spent searching for it. In the southern part it can be picked up fairly readily but it is not at all abundant.

Barberries in many places are still shooting spores to some extent. This is due to a late infection on the barberries. The early infections are dead and have turned black, but the later infections are shooting spores at this time.

Iowa field men are making an intensive survey in Allamakee County but are finding very few barberries at the present time. The work in this county is progressing very slowly because of the rough topography and extensive timber. Thirteen men make up the barberry force in Iowa at the present time.

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L.W.Melander

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 18

July 31, 1928
Personnel (July 21-31) and Project Issue

PERSONNEL ITEMS

Dr. C. R. Ball, principal agronomist in charge, will leave Washington on August 3 on a field trip and conference of the State Leaders of barberry eradication for the purpose of standardizing survey and eradication methods. The conference trip will start at Omaha, Nebr., on Monday, August 6, and will traverse eastern Nebraska, Iowa, northwestern Illinois, southwestern Wisconsin, Minnesota, and the eastern portion of the two Dakotas; it will end about August 20.

After the conclusion of this trip Dr. Ball expects to visit cooperative cereal and cereal-disease experiments in some of the same States. He also will make stops at Bloomington, Ill., and La Fayette, Ind.

C. E. Chambliss, associate agronomist in charge of rice investigations, returned on July 23 from Elsberry, Mo., where this Office will conduct, in cooperation with the Missouri Agricultural Experiment Station, experiments to determine the practicability of introducing rice into the cropping systems of the bottom lands of the State.

M. A. McCall, principal agronomist in charge of agronomic section, returned to Washington on July 28 from a trip covering field stations in South Dakota, a part of North Dakota, and stops at St. Paul, Minn., and Madison, Wis. In North and South Dakota the trip was made by automobile in company with Messrs. J. Allen Clark and E. R. Ausemus. Stops were made at Fargo and Mandan, N. Dak., and Webster, Redfield, Highmore, and Brookings, S. Dak. The primary purpose of this trip was to study conditions and to discuss with experiment station personnel the possible future development of cereal breeding in that area.

Three days were spent at Madison, Wis., in inspecting cooperative experiments and in discussing methods of research with Dr. J. G. Dickson.

AGRONOMIC CORN-BORER RESEARCH

The following appointments have been made in connection with the Agronomic Corn-Borer Research program of the Office of Cereal Crops and Diseases:

John S. Cutler, Wooster and Bono, Ohio

Joseph F. Haskins, Wooster and Bono, Ohio

Louis R. Jorgenson, Columbus, Ohio

Robert W. Jugenheimer, Ames, Iowa

T. A. Kiesselbach, Lincoln, Nebr.

Vincent H. Morris, Wooster and Bono, Ohio

Marion T. Myers, Columbus, Ohio

Jasper D. Sayre, Wooster and Bono, Ohio

L. J. Stadler, Columbia, Mo.

Most of the Ohio experiments are conducted under conditions of heavy infestation at the Ohio Corn-Borer Experiment Station at Bono, in cooperation with the U. S. Bureau of Entomology, the Ohio Agricultural Experiment Station, and the Ohio State University. Certain phases of the experiments also will be carried on at Wooster and Columbus, Ohio, and on some of the outlying experimental farms. The program includes corn-breeding experiments, experiments on rate and date of planting different varieties and on cultural methods as affecting the rate of development and yield of corn, and intensive investigation of the physiology and biochemistry of the corn plant,--all in relation to infestation and damage by the European corn borer.

In addition to the experiments in Ohio, cooperative experiments on the effect of rate, date, and manner of planting different varieties of corn upon the plant life history and development, and upon yield and quality have been undertaken in cooperation with the agricultural experiment stations of Iowa, Kansas, Missouri, and Nebraska.

MANUSCRIPTS AND PUBLICATIONS

33 A manuscript entitled "Observations on Tassels of Teosinte Malformed by Sclerospora," by Wm. H. Weston, Jr., and J. H. Craigie, was submitted on July 26 for publication in the Journal of Agricultural Research.

34 A manuscript entitled "A Note Relative to the Occurrence of Sclerospora graminicola on Maize in Wisconsin," by Wm. H. Weston, Jr., was approved on July 27 for publication in Phytopathology.

35 A manuscript entitled "The Relation of Weather to the Development of Stem Rust in the Mississippi Valley," by E. B. Lambert, was approved on July 27 for publication in Phytopathology.

Galley proof of article entitled "Effect of the Continuous Selection of Large and Small Wheat Seed on Yield, Bushel Weight, Varietal Purity, and Loose Smut Infection," by J. W. Taylor, for publication in the Journal of the American Society of Agronomy, was read July 26.

A note entitled "Polyembryony in Rice," by Jenkin W. Jones, appears in the Journal of the American Society of Agronomy 20 (7): 774. July, 1928.

The paper entitled "New Physiologic Forms of Tilletia levis and T. tritici," by E. F. Gaines, appears in Phytopathology 18 (7): 579-588. July, 1928. (Cooperative investigations between the Office of Cereal Crops and Diseases and the Washington Agricultural Experiment Station.)

The article entitled "A Field Method of Insuring Positive Attack with Some Cereal Diseases," by W. W. Mackie, appears in Phytopathology 18 (7): 617-621. July, 1928. (Investigations conducted cooperatively between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 19

August 10, 1928
Personnel (Aug. 1-10) and Field Station (July 16-31) Issue

PERSONNEL ITEMS

F. D. Richey, senior agronomist in charge of corn investigations, left Washington on August 8 for an extended field trip in the interests of corn investigations. After visiting New Brunswick, N. J., New Haven, Conn., and Ithaca, N. Y., Mr. Richey will proceed west to some of the stations in California, Washington, and Oregon, returning to the Corn Belt through Montana and North Dakota. The trip will be completed with visits to some of the stations in the Corn Belt where cooperative investigations are under way. Mr. Richey expects to return to Washington about September 30.

Benton E. Rothgeb, of the Bureau of Agricultural Economics, formerly of this Office, left Washington on August 4, as the representative of this Office, to assist in the cooperative combine-harvester studies in the State of North Dakota.

Mr. Rothgeb will have charge of the agronomic phases of the cooperative studies. In this year's operations special attention will be given to a study of windrow harvesting and to crops which heretofore have not been extensively studied, such as flax and barley. Emphasis also will be laid on a study of the effect of climatic factors on the condition and keeping quality of the harvested grain.

Glenn M. Smith, who has been assisting in the cereal experiments at the Dickinson Substation, Dickinson, N. Dak., has been transferred to the Langdon Substation of the North Dakota Agricultural Experiment Station to care for the harvest of the cooperative durum wheat nursery grown at that point.

VISITORS

S. H. Hastings, formerly superintendent of the San Antonio Experiment Farm, of the Office of Western Irrigation Agriculture, and more recently connected with the Firestone Rubber interests, was an Office visitor on July 30.

MANUSCRIPTS AND PUBLICATIONS

36 A paper entitled "Cooperation in Corn-Borer Research," by Carleton R. Ball, was approved on August 4 for publication in the Journal of the American Society of Agronomy.

37 A manuscript entitled "Further Studies in Quantitative Virological Methods," by H. H. McKinney, was approved on August 4 for publication in Science.

38 A manuscript entitled "Natural Crossing in Flax," by A. W. Henry and Chih Tu, was approved on August 9 for publication in the Journal of the American Society of Agronomy.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (August 1)

Threshing of the small grains grown at Arlington Farm is completed. The quality of the wheat is excellent both in color and bushel weight. However, the yields were approximately 25 per cent below average. The usually high yielding variety, Purplestraw, used as a check gave a poor yield, being surpassed by the majority of the varieties. A pure-line selection from Mammoth Red made by W. J. Sando was the highest yielder in the triplicate series.

Purkoff and Michikoff were given their first plot test. Purkoff yielded high, but Kanred also gave a yield higher than Purplestraw,--the first time in the 11 years it has been grown in the experiments.

Spelt produced low actual grain yields, but, in comparison to the check plots of wheat, the spelt yields are up to the average.

Rye yields were slightly below the average. Winter injury from low temperatures was not noticeable.

The yields of wheat, spelt and emmer, and rye are presented in the following tables:

Average yield of winter wheat varieties grown in triplicate 40th-acre plots, compared with average yield from nearest check plots, at Arlington Experiment Farm in 1928

Variety	C.I.No.	Yield (Bu.per acre)	Yield Check plots (Bu.per acre)	Gain or loss of variety compared to check (Bu.per acre)
Mammoth Red Sel.	----	29.7	23.1	+6.6
Red Wonder	5780	27.8	24.4	+3.4
Selection 1915B	----	24.2	21.2	+3.0
Red Rock	5976	29.1	26.9	+2.2
Nittany	6882	24.8	22.1	+2.7
Mammoth Red	2008	28.9	26.9	+2.0
Wheat-Rye 16-1A	----	23.8	22.1	+1.7
Shepherd	6163	23.8	22.1	+1.7
Fulcaster	6162	26.3	24.6	+1.7

Continued

Variety	C.I.No.	Yield (Bu.per acre)	Yield Check plots (Bu.per acre)	Gain or loss of variety compared to check (Bu.per acre)
Poole	1979	25.8	24.6	+1.2
Illini Chief	5406	25.1	24.6	+ .5
Leap	4823	24.2	23.9	+ .3
Dietz	1981	24.8	24.6	+ .2
Rod Row 115	----	20.8	21.2	- .4
Forward	6691	22.3	23.1	- .8
Fultz	1923	23.1	24.4	-1.3
F_7 Kanred x Genessee Giant	----	22.2	24.4	-2.2
Potomac	1733	21.6	23.9	-2.3
Poole	3489	21.1	23.9	-2.8
Missouri Bluestem	1912	20.8	24.4	-3.6
Purplestraw	1957	21.9	26.9	-5.0
Genessee Giant	1744	18.5	24.4	-5.9
Fulcaster	1945	20.4	26.9	-6.5
Purplestraw (21 check plot average)	1915	24.7	----	---

Average yield of winter-wheat varieties grown in single 40th-acre plots, compared with yield from check plot, at Arlington Experiment Farm in 1928

Variety	C.I.No.	Yield (Bu.per acre)	Yield Check plot (Bu.per acre)	Gain or loss of variety compared to check (Bu.per acre)
Purkoff	----	33.4	26.9	+6.5
Mass Mixture	----	34.1	30.2	+3.9
Mass Hybrid	----	33.3	30.2	+3.1
Amber Longberry	1973	22.7	20.6	+2.1
Kanred	5146	28.9	26.9	+2.0
Nigger	5689	21.6	20.6	+1.0
Bearded Purplestraw	5779	27.7	26.8	+ .9
Do	1911	26.9	26.8	+ .1
Michikoff	----	24.8	26.9	-2.1
Rod Row 676	----	18.4	20.6	-2.2
Kanred Mixture	----	24.5	26.8	-2.3
Red Rock selection	----	27.3	30.2	-2.9
Early Harvest	----	23.1	26.8	-3.7
Currell	3326	16.5	20.6	-4.1
Berkeley Rock	6941	23.0	30.2	-7.2

Average yield of winter-wheat varieties grown in duplicate 40th-acre plots, compared with average yield from check plot, at Arlington Experiment Farm in 1928

Variety	C.I.No.	Yield (Bu.per acre)	Yield Check plot (Bu.per acre)	Gain or loss of variety compared to check (Bu.per acre)
Dawson	6161	29.3	22.1	+7.2
Hybrid	3608	23.2	19.5	+3.7
Wheat-Rye 10	----	25.5	22.1	+3.4
Jersey Fultz	5774	22.2	19.5	+2.7
Stoner	2980	24.8	23.1	+1.7
Hybrid	3614	23.6	22.1	+1.5
Harvest Queen	6883	20.6	19.5	+1.1
Brown Fife	1933	24.0	23.1	+ .9
Rod Row 959	----	23.2	23.1	+ .1
China	180	18.6	19.5	- .9
Rod Row 62	----	21.8	23.1	-1.3

Average yield of winter spelt varieties and Black Winter emmer grown in duplicate 40th-acre plots at Arlington Experiment Farm in 1928

Variety	C.I.No.	Yield (Bu.per acre)
Red Winter spelt	----	32.8
Alstroum do	3264	30.8
Bearded Winter spelt	1724	28.0
Alstroum spelt	1773	27.8
Black Winter emmer	2337	12.2
Purplestraw wheat[a]	1915	18.0

[a] Average yield of comparable wheat check plots

Yield of winter-rye varieties grown in 20th-acre plots at Arlington Experiment Farm in 1928

Variety	C.I.No.	Yield (Bu.per acre)
Selection 41	----	35.5
Ivanof	34	34.5
Henry	138	33.0
Mexican	108	32.2
Star	----	31.5
Von Rümker No. 1	173	29.8
St. Johns	130	28.6
Rimpau	126	28.0
Abruzzes	40	26.8
Von Rümker No. 2	133	26.2
Selection 44	----	25.5
Rosen	195	15.0

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins) (August 7)

Work on the Station progressed favorably during the month of July. Cotton and soybean plots were cultivated twice and all rice plots were weeded.

Early maturing varieties of rice are heading and indicate rather poor yields. The late-maturing varieties will yield better but not so well as they have often done in the past.

Many fields of early sown rice began to head in the first week of July. These early fields generally are rather grassy and are not likely to produce heavy yields.

In general late rice does not look very healthy and is rather thickly infested with small aquatic weeds, which, in some areas, are preventing good plant growth. This condition in the late-seeded fields no doubt is the result of irrigation for germination and of early submergence.

The precipitation recorded at the Station for July was only 3.49 inches. This is a light rainfall for the month, as compared with 11.46 inches in 1927 and an 18-year average of 6.41 inches. However, rain fell on 17 days. In some sections of southwestern Louisiana the rains were very heavy. These were beneficial to rice, but as a whole the precipitation was not sufficient to give much direct aid to irrigation.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L.J.Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L.S.Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert) [July 30]

Our controlled-pollination work started 11 days earlier this year than last year. Corn, in general, is much farther advanced at this period of the year throughout central Illinois than it has been for several years, and the indications are very promising for an unusually good corn crop in this vicinity.

In spite of the warm rainy weather that prevailed during the early part of July there are several fields of Illinois No. 1 Spring Wheat that have matured with a minimum development of scab.

A number of new combines are being used in the harvesting of wheat and oats.

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer) (J. F. Trost) (August 2)

Excellent growing weather for corn prevailed throughout Indiana during the entire month of July. It was necessary to cultivate later than usual to kill the weeds which had obtained such a good start during the wet period in June. Many fields are now showing the effects of the root pruning caused by this late and deep cultivation. The crop for the State still is rather weedy and generally shows symptoms of nitrogen starvation at the present time.

Leaf-sheath infections were observed on corn at scattered places early in July at about the time wheat scab was most prevalent. The presence of leaf-sheath infection is rather unusual at this stage of development of the corn plant,--about two weeks before tasseling.

The pollinating season is at its peak at the present time. Aside from rather windy days, weather conditions have been ideal for pollinating.

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains) (July 28)

Frequent thunderstorms have occurred in July, and the temperature for the most part has been high. Leaf-rust development has been slow at La Fayette. Winter-wheat varieties matured before a maximum development had been reached. The most susceptible of the spring wheats, such as Little Club, showed 100 per cent infection by July 5. Septoria has been very prevalent and has caused considerable defoliation. In many cases the leaves of the slower rusting varieties were killed before much rust developed. Scab has been very severe on both barley and wheat. The most susceptible varieties have shown practically 100 per cent infection, all of the heads being infected and nearly all of the spikelets. There are marked differences in the amount of infection of both the varieties of barley and wheat. Dr. J. G. Dickson of Madison, Wis., inspected the nurseries on July 19 and obtained notes concerning varietal reaction to scab. Scab apparently is very prevalent in Indiana this year and will cause a considerable reduction in yield. Stem rust appeared among the spring wheats and oats about July 16. Only a scattered infection developed in the varietal nursery. Some of the plants in the spaced nursery showed 50 to 75 per cent before harvest.

Mr. Compton started the harvesting of barley varieties on July 16. The winter survivals in the winter wheat nursery were harvested from July 19 to 23. On account of the irregular thin stand and the weedy condition of the nursery, as a result of the wet weather during the spring, the harvesting of winter wheats was a slow and troublesome process. Harvesting of spring wheats was started July 24. Many of the varieties evidently will give very low yields on account of scab.

The corn varieties in the corn-rust plots are developing rapidly. Pollination started July 19 in lines of such early varieties as Golden Bantam. At present, Mr. Bockstahler is devoting all of his time to pollination. The rust is developing and the most susceptible lines are showing a moderate infection. Mr. Trost and Mr. St. John report a moderate development in their plots.

Reports from the State Leaders of barberry eradication indicate that in general leaf rust has developed very slowly and irregularly. In most cases where heavy infection was reported, it was late in the development of the crop. On June 23, Ohio reported leaf rust of wheat general over the State showing 5 to 50 per cent infection. On July 14 it was reported moderate to heavy with wheat cut in the south and cutting started in the north and practically completed on July 21.

Indiana reported a trace of leaf rust general on June 30 and a moderate amount on July 14. Wheat south of La Fayette was harvested by July 14, and harvesting in the northern part of the State was almost completed by July 25.

Illinois reported an infection of 50 to 65 per cent general in southern Illinois on June 30 while only a slight amount occurred on July 14 in the northern part of the State. By July 21 most of the wheat was cut.

Wisconsin reported a general infection on June 30, varying from 0 to 20 per cent. July 7 showed a slight increase,--T to 25 per cent. By July 14 leaf rust was general and in some cases had reached 100 per cent. On July 21 winter wheat was reported as mature and spring wheat in the soft dough stage.

Minnesota reported leaf rust prevalent on July 2. A heavy infection was noted on Little Club wheat at Red Wing July 9. On July 17 winter wheat was ripening and spring wheat was in the soft dough stage.

Iowa on June 30 reported considerable irregularity in the amount of infection varying from 0 to heavy. On July 14 infection was fairly general but most of the wheat was cut.

Nebraska on June 30 reported a rapid development during the preceding week, resulting in about a 75 per cent infection.

South Dakota on June 30 also reported a rapid development resulting in a prevalent infection of a trace to 5 per cent in the eastern part. On July 7 the rust was general over the entire State, being 40 to 80 per cent in the southeast and a trace to 20 per cent in the northeast. On July 14 the rust was reported as general, varying from 4 to 75 per cent.

North Dakota on June 30 reported leaf rust as a trace, the variety Kota in some cases showing moderate infection. Little further development was noted up to July 17 at which time wheat was in the late milk or dough stages.

Colorado on June 30 reported leaf rust as most prevalent in the eastern part of the State. A general moderate infection had developed by July 7. By July 14 winter wheat was ripe and spring wheat in the soft dough stage.

Montana reported a trace of leaf rust June 30 in Lake and Flathead counties.

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (August 1)

The weather of the last half of July was typical of this region--dry and hot. Rain is needed and the sooner it comes the better.

Sorghums and broomcorn have made progress, but yields from the earliest date-of-seeding experiment and early varieties are already decreased by the drought.

The milos, feteritas, and a few other early varieties are heading in the May 26 seeding and some heads are being bagged for seed.

Maximum temperature for the last half of July, 101 degrees on the 18th; minimum, 59 degrees on the 23rd. Precipitation, 0.29 inch, recorded on two dates; total precipitation for July, 1.32 inches.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker) (July 19)

The following table presents the yields of a few of the more promising new winter-wheat varieties and crosses as determined in a special or advanced nursery experiment at Manhattan, Kans., in 1928.

Yields of varieties and crosses of Winter Wheat in the advanced nursery test, Manhattan, Kans., 1928

(Ten 3-row plots of each variety)

Variety	Kansas or Sel. No.	Bushels per Acre	P. E.	Average lodging (Per cent)
Tenmarq[1/]	439	59.94	± 1.09	44
Kanred x Hard Federation	Sel. 254892	59.03	± .69	35
Prelude x Kanred (Hairy chaff)	2628	59.02	± .09	56
Kanred x Hard Federation	2625	58.45	± .90	28
Kanred x Hard Federation	Sel. 254529	58.35	± 1.40	59
Kanred x Hard Federation (Seg. for awn type)	Sel. 253123	57.71	± 1.29	21
Kanred x Hard Federation	2626	57.39	± .93	24
P1066-1 x Prelude	2629	57.24	± 1.62	49
Kanred x Marquis	Sel. 214211	56.76	± .68	21
Fulhard	2594	54.75	± 1.28	45
Kawvale	2593	53.50	± .96	37
Blackhull	343	53.33	± 1.31	45
Kanmarq	440	53.29	± 1.20	11
Superhard	470	51.40	± .90	44
Menno	496	50.73	± 1.39	60
Kanred[1/]	2401	49.25	± 1.15	65

Average yield of varieties = 55.63 Bushels
Average P. E. = 1.12 Bushels or 2.01 per cent

1/ Difference in yield of Tenmarq and Kanred = 10.69 Bushels
P. E. of difference = ±1.58 Bushels

$$\frac{\text{Difference}}{\text{P. E.}} = 5.77$$

Odds = 15,118 : 1

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson) [August 3]

June and July were characterized by excessive rainfall which for the most part was general over the entire State. The precipitation for July at Manhattan was 7.38 inches as compared to a normal of 4.50 inches. The average mean temperature for the month was 77.81 which is 1.03 degrees below the normal, but the relative humidity was unusually high which tended to make the higher temperatures very uncomfortable. On all but three days of the month the relative humidity at 7 A.M. was above 95. The maximum temperature was 100 degrees on July 4 and the minimum 56 degrees on July 28.

The wet weather has been a hindrance to harvest and threshing but has made ideal conditions for corn. Corn seen by the writer is generally clean considering the season. All indications now point toward yields that will exceed last year's bumper crop.

Hand pollinations in the corn nursery have been very satisfactory although at times the work has been interrupted or has been made disagreeable by frequent showers. The first pollination was made on July 6, and the main part of the work promises to be over by August 10. Early and late sorts seem to have come in flower more nearly together than usual.

Dr. Paul Manglesdorf, of College Station, Tex., was a visitor on July 20.

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (July 30)

One of the heaviest rainfalls ever recorded at Hays occurred on July 29 when 4.5 inches fell. At Ellis, 15 miles west, five inches fell; at Wakeeney, 40 miles west, seven inches were reported. Because of these heavy rains over a wide territory, Big Creek, which runs through the southern limits of Hays and across the Experiment Station grounds, overflowed its banks. The extent of the damage has not yet been determined.

Many people in the southern part of Hays were compelled to leave their homes. In other residences and business houses the basements were filled with water. Nearly the entire forest nursery on the Station was under water from two to 15 feet. The Station's water supply is located on the nursery grounds, but it is hoped that service can soon be resumed. Possibly 250 cars and their occupants were marooned near Hays. Twenty-four hours after the rains, teamsters were still in demand to two stranded cars over the main highway from the south leading into Hays, the water on the pavements being 3-1/2 feet deep. Fortunately flood warnings were issued so that people had time to prepare for the emergency.

All of the threshing on the Cereal Project was completed a day before the heavy rains. Corn looks particularly fine, as the month of July has been cool and moisture has been plentiful. While the sorghums are now making a good growth, the crop is somewhat late because of the cool weather in July.

Nearly all of the harvesting has been completed in the vicinity of Hays, but little threshing has been done. The heavy rains no doubt will cause some losses where the grain was either bound or headed. Where the wheat was cut by combines, farmers generally have followed up the harvesting with listers in preparing the ground for another crop. Conditions are favorable for an excellent crop of wheat next year for the reason that early July and August moisture always is an important determining factor.

Corn is making excellent growth in all of northwestern Kansas. There is a large acreage.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle) (July 30)

Very heavy showers accompanying periodic thunderstorms, which invariably have been followed by sultry weather, have resulted in a very rapid and severe development of rust on the susceptible varieties of flax.

The rainfall for July in the vicinity of Fargo was 4.21 inches above normal. Much of this rain fell as deluges in showers.

Flax growing on low or poorly drained land has been injured by excessive rainfall.

On July 20, pasmo was found to be very prevalent on the leaves of certain very susceptible strains of Argentine flax in the vicinity of Fargo.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (July 31)

Harvesting at the Substation began yesterday with the cutting of all varieties of winter rye, 14 varieties of barley, and six of early oats. Nursery harvest will begin in a few days, as early barley varieties are nearly ripe. Early varieties of spring wheat in plots are nearly ripe, and midseason varieties are beginning to ripen. Barley and rye in this vicinity are being harvested, and the bulk of the harvesting of Marquis wheat probably will begin the first of next week or about August 6 or 8. The average date of ripening for Marquis wheat at the Substation is August 7, and our varietal plots of Marquis will be ripe not far from that date this year.

Nursery rows are being trimmed and tags placed preparatory to harvest.

Considerable bunt is developing in the varietal smut nursery and in the hybrid nursery sown with bunt-inoculated seed. It is interesting to note that smutted heads of last year's crop that lay on the ground in nursery stubble all winter apparently did not lose much of their virulency. Smut from this source was used to inoculate seed of Ulka Selection No. 1, after treating the latter with formaldehyde. The resulting crop of this very susceptible variety apparently has more than half of the heads smutted.

A small amount of stem rust was noticeable on susceptible spring-wheat varieties about July 23. Due to rather dry weather since that time the amount of rust has not greatly increased although it may still increase on late-sown varieties. Susceptible varieties of oats and barley apparently have more rust than wheat varieties.

A maximum temperature of 93 degrees was recorded yesterday. This high point was reached once before this season in the last week of May. The precipitation for July was 3.52 inches which is approximately the same as that for June this year. Both records are somewhat above normal. This precipitation together with cool weather has helped to produce unusually high yields of all small grains except rye. Of this there will be about an average crop at the Substation.

Official visitors at the Substation the latter part of July included President J. L. Coulter, of the N. Dak. Agricultural College, Director P. F. Trowbridge, of the State Experiment Station, W. P. Baird, of the Field Station at Mandan, and Miss Marion A. Griffiths, J. Allen Clark, K. S. Quisenberry, A. C. Dillman, F. A. Coffman, and H. L. Westover, of the U. S. Department of Agriculture at Washington. Miss Griffiths made counts of the number of smutted heads of spring wheat in the Uniform Bunt Nursery.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (August 2)

Flax plats seeded on April 21, April 30, and May 10 in the date-and-rate-of-seeding and tillage experiment are nearly ready to harvest.

Other flax plot and nursery seedings have made very satisfactory growth.

Wilt is more conspicuous in the flax sick-soil nursery seedings than for several years past. There is considerable wilt in many varieties usually considered as very wilt resistant. Winona is going down very badly with wilt. Some of the varieties and selections of Argentine origin are showing practical immunity from wilt.

There already is a very severe natural epidemic of flax rust, so that striking differences in susceptibility, resistance, and immunity already are showing up.

A hail and rain storm on August 2 did some damage to crops at the Station. Some of the flax varietal plots are down today but may straighten up all right.

A. C. Dillman is here this week taking notes on the classification nursery.

The Annual Missouri Slope Fair, held Tuesday, Wednesday, Thursday, and Friday of this week, though coming just at the beginning of harvest, is being well attended.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (August 2)

This July has been the second wettest on record at the Station. The precipitation for July was 4.94 inches, while in 1915 it was 6.48 inches. The average rainfall for this month is 2.61 inches. The maximum temperature during the latter half of July was 92 degrees on July 30, and the minimum was 50 degrees on July 26.

As a consequence of the abundant rainfall all cereal crops are in excellent condition. Cereals are ripening very unevenly. The earlier culms of the wheat plants are now ripe, while the later tillers, which developed after the rains beginning June 11, are green. The only grain harvested on the Station to date is three of the earlier varieties of barley.

There is only a light infection of stem rust in the nursery at Mandan this year. Black chaff is prevalent on a large number of the varieties and strains. Oats stem rust was first found on July 24.

Farmers are busy harvesting winter rye, barley, and oats. Wheat harvest will begin within the next few days.

The writer, accompanied by J. Allen Clark, made a trip by automobile through southeastern North Dakota and northeastern South Dakota to inspect crop conditions. M. A. McCall joined us at Aberdeen, S. Dak., and accompanied us to Mandan. General crop conditions were studied and the following stations were visited: Eureka, Redfield, Highmore, and Brookings, S. Dak., and Fargo, N. Dak. Two farmer plant breeders were visited,--Mr. Aitkins at Frederick, S. Dak., and E. S. McFadden at Webster, S. Dak.

Wheat was poor and thin from Mandan south. The other cereal crops, barley, oats, and corn were somewhat better. Crops were satisfactory at Webster, S. Dak., from Brookings to Fargo, and from Fargo to Mandan.

Only a slight infection of stem rust was found in the wheat fields inspected at various points en route.

Visitors at the Station during the latter part of July were J. Allen Clark, M. A. McCall, F. A. Coffman, K. S. Quisenberry, Dr. H. B. Humphrey, and Miss Marion A. Griffiths.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (July 31)

The precipitation for July was 2.77 inches, as compared to a normal of 1.82. The maximum temperatures were 87 degrees on the 15th, 25th, and 30th and 86 degrees on the 27th. The minimum temperatures were 43 and 44 degrees on the 3rd and 2nd, respectively. Because of the weather conditions during the last half of June and the month of July, spring grains have made a wonderful comeback and promise some very high yields. Varieties that were starting to head at about 1-1/2 to 2 feet high are 3-1/2 to 4 feet tall now.

Winter wheat, especially early seeded fields, will give very low yields in the vicinity of the Substation. Late-seeded fields in this vicinity promise good yields, and in some localities of the Basin there will be a good crop of winter wheat. Dr. Hurley Fellows, in charge of the foot rot project, has been at the station for the last two days and has found the trouble with the winter wheat to be due to Helminthosporium. The severe winter conditions followed by a late spring freeze and the prolonged, hot, dry spell of May and June, apparently were very favorable for the production of an epidemic.

I just returned from a trip to Havre where prospects indicate a total wheat crop in the Triangle area nearly equal to that of last year. Yields will not be so large, but a larger acreage has been seeded.

The Nineteenth Annual Judith Basin Farmers' Picnic was held at the Substation on July 19. This probably is the largest gathering of farmers in the Northwest. A count at the gate showed that over 900 cars entered this year. The attendance was estimated at 6,000 to 8,000. Chester Davis, former Commissioner of Agriculture for Montana, and Tom Stout, a former U. S. Senator from Montana, were the chief speakers.

During the month of July four groups of farmers visited the Station. Over 200 farmers made up these groups and showed a keen interest in the work being done here. Each of the groups was from a different community in central Montana. They expressed the desire to make the trip an annual event.

Harvest on the project will start next week.

Official visitors at the Substation during the month of July were J. Allen Clark, Dr. Hurley Fellows, and F. A. Coffman of the Office of Cereal Crops and Diseases; H. L. Westover, of the Office of Forage Crops; A. E. McClymonds, of the Aberdeen (Idaho) Substation; Clyde McKee and Director Linfield, of the Montana Experiment Station; and George Morgan, of the North Montana Branch Station.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C.W.Hungerford) (J. M. Raeder) (July 21)

The various winter-wheat varieties on the agronomy plots were examined for stripe rust (Puccinia glumarum) on July 9. There were 30 varieties of wheat in rod rows, replicated three times. The prevalence, severity, and degree of infection of each are presented in the following table:

Variety	Prevalence & Severity (Per cent)	Degree of Infection	Remarks
Hybrid 128	90/10	2	
Kharkof	10/5	1	
Hybrid 128 x Fortyfold	25/5	1-2	
Mosida	5/8	2-3	
Hybrid 143	60/25	3	
Jones Fife	100/90	4	
Jenkins Club	85/30	3-4	
Red Russian	T	1	
Hybrid 123	50/70	2	
Coppei	25/10	1	
Albit	40/25	1-2	
Turkey x Florence	5/5	1	
Crimean	T	1	
Argentine	10/2-5	1-2	
Martin	5/2	2	
Sherman	T	1	
White Odessa	15/5	1-2	
P-1068 x Preston	10/5	1	
Hussar	T	1-2	
Turkey	T	2	
Fortyfold	80/50	1-2	
Kanred	T	1	
Bluestem	50/20	2	
Federation	40/25	2	
Blackhull	0	-	Severe mildew
Fortyfold x Federation	80/50	3-4	
Kanred x Marquis	10/10	1	
Early Arcadia x Hard Fed.	10/5	3	
Ridit[a]	0	-	
Triplet	T	1	

[a] It is of interest to know that Ridit is Dr. E. F. Gaines' bunt-resistant wheat.

The reaction of Jones Fife and Turkey in the agronomy plots is of interest in view of the fact that the same wheats reacted similarly in the Flathead Valley in Montana. A survey was made in that Valley on July 8-9 by W. L. Popham, State Leader of barberry eradication for Montana, and the writer.

Roughly speaking, winter wheat comprised about 30 per cent of the total wheat area. Jones Fife, locally known as "Velvet Chaff," comprised the major portion of the winter wheat in the Valley. The remainder of the winter-wheat area was seeded with Turkey. Every field of Jones Fife, no matter where it was located in the Valley, showed in nearly every case a prevalence of 100 per cent stripe rust, with a severity of from 50-90 and a grade of 4 in degree of infection. The infection had destroyed the leaves. The culms were involved to the extent that many showed severe infection on the necks. Nearly every head showed some infection on the glumes, and in some cases all of the glumes were involved.

In view of the fact that the fields ranged from the milk to hard dough stages, it naturally follows that damage will result. Because of the fact that this is the writer's first experience with such a severe epiphytotic, he hesitates to estimate the amount of damage that will result.

It was interesting to note that, with the great amount of inoculum present in the Valley, Turkey wheat showed only a trace of infection. In view of the fact that the growers claim that Jones Fife outyields Turkey, it would be an easy matter to make comparisons when harvest takes place and thus arrive at an idea of what the losses will be.

Hordeum jubatum was heavily infected throughout the Valley.

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E.F.Gaines) (August 2)

The following table presents the results from the harvest of one of the experiments on different physiologic forms of wheat smut, conducted in cooperation with the Washington Agricultural Experiment Station.

Host	Date sown in 1927	Inoculum: Pullman: T. tritici	Lind: T. levis	Waterville T. levis T. tritici 3 p.c.	Moccasin T. levis	Albit: T. levis 10 p.c.: T. tritici	Mixed	Average
Hybrid 128	10/8	87	91	92	87	87	95	89.8
	10/29	82	72	67	57	59	55	65.3
Triplet	10/8	78	84	82	76	76	92	81.3
	10/29	25	39	30	41	32	17	30.7
Turkey	10/8	10	80	90	90	54	84	68.0
	10/29	0	69	48	77	52	57	50.5
Martin	10/8	0	5	7	29	66	29	22.7
	10/29	0	2	0	13	41	26	13.7
Ridit	10/8	0	5	3	0.3	0.2	0.3	1.3
	10/29	0	0	0.5	1	0	0	.2
Hussar	10/8	0	0	6	5	22	11	7.3
	10/29	0	4	3	8	17	12	7.3
White Odessa	10/8	0	12	53	55	81	63	44.0
	10/29	0	0.4	26	17	36	37	19.4
Albit	10/8	0	2	37	30	69	38	29.3
	10/29	0	2	5	11	22	3	7.2
Hohenheimer FF Unbehaart	10/8	0	0	0	0	0.3	0.2	.1
Heils Dickkopf	10/8	2	5	4	1	0.3	7	3.2
Average	10/8	17.7	28.4	37.4	37.3	45.6	48.2	
Average	10/29	13.4	23.5	22.4	28.1	32.4	25.9	

From a microscopic examination of the smut from the various plots, it is curious to note that on the wheat from the Waterville inoculum more Tilletia tritici than T. levis was found. This is the more remarkable because over 95 per cent of the inoculum was T. levis; in fact, only T. tritici was found on Martin, Hussar, White Odessa, and Albit. It will be noticed that all four of these wheats showed no trace of smut when inoculated with the T. tritici from Pullman. There was both T. tritici and T. levis on different heads of Ridit from the Waterville inoculum.

The spring wheats have not yet been harvested, but a preliminary examination indicates that Marquis is very resistant to all of the forms listed in the foregoing table with the exception of that from Montana, which was not used in the spring experiments. It is still more striking that Hope wheat seems to have come through without a trace of smut from any of the inoculations and is, therefore, in a class by itself in this respect, as it is with the rusts. Second-generation hybrids between Hope and the four resistant varieties, Martin, Ridit, Hussar, and White Odessa, are being grown this year at Pullman.

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (August 1)

A number of the early maturing varieties in the nursery and varietal plots are heading. The midseason varieties have begun to boot. Rice on the Station does not look so well as it did last year at this time.

Many commercial rice fields on old land look very foul at present. The white water grass is nearly fully headed and almost completely hides the shorter rice crop.

The rice market remains quiet and prices are slightly lower than they were on June 30. There are indications that a good deal of rice will be carried over from last year's crop.

The weather during July was reasonably favorable for the growth of rice. The maximum temperature recorded was 102 degrees F. on July 8 and the minimum was 53 degrees F. on the 9th. The average maximum temperature was 94.2 degrees F. and the average minimum, 59.1 degrees F. The mean temperature was 76.7 degrees F. This is the lowest mean temperature for July since 1924.

University Farm, Davis (Cereal Agronomy, V. H. Florell) (July 30)

Yields of grain in bushels per acre have been calculated for varieties of cereals in the plot experiments. Each variety was grown in five 50th-acre plots except as noted. The yields are presented in the following table.

Variety	C.I.No.	Calif. No.	Average Yield (Bu. per acre)
WHEAT			
Little Club x Fretes	----	1921B	60.7
Baart x Hard Federation	----	1969 V	59.7
Federation	4734	----	58.2
White Federation	4981	----	57.7
Baart x Hard Federation	----	1970 V	57.6
Hard Federation x Prelude	----	1985 IV	57.1
Hard Federation x Bunyip	----	B 5374	56.8
Hard Federation	4733	----	55.5
Sonora x Cedar	----	873	55.1
Onas	6221	----	54.8
Baart	1697	----	54.6
Baart x Clarendon	----	----	53.6
Escondido	8240	----	53.5
Little Club x Clarendon	----	A346-3-1	53.3
Hard Federation Selection	8255	----	52.0

Variety	C.I.No.	Calif. No.	Average Yield (Bu. per acre)
WHEAT (Continued)			
Sonora [a]	3036	----	48.1
Hard Baart	----	----	45.5
Baart	1697	----	45.0
Marquis[a]	4158	----	36.5
Pacific Bluestem	4067	----	32.9
Kharkov[a]	1442	----	31.9
Little Club	4066	----	29.0
Wheat Hybrids			
Cornell Durum[a]	----	271A1-C-5	62.1
Little Club x Clarendon[a]	----	A-367	59.8
White Federation[a]	4981	----	59.2
Defiance[4a]	----	----	59.0
Thew x Cedar[a]	----	VII 668	58.8
Hard Federation x Bunyip[a]	----	537-2	56.3
Alcalde[a]	----	VII 903	50.0
Blenoir x Hard Federation[a]	----	B 434	47.7
Hindi[a]	2807	----	43.8
BARLEY			
Vaughn	1367	----	81.5
Sacramento	4108	1511	80.8
Vaughn Selection[a]	1367-2	----	74.0
Tennessee Winter x Hero	----	----	73.7
Vaughn Selection[a]	1367-1	----	67.5
Archer	1031	----	66.8
Coast	690	----	63.1
Tennessee Winter (old)	257	----	62.7
Atlas	4118	----	58.8
Composite Cross[a]	4116	----	53.7
Hero	1286	----	52.9
Mechanical Mixture[a]	4115	----	51.6
Coast Selection[a]	4119	268B	50.7
Club Mariout	261	----	46.2
Tenn. Winter (New from Wash.)[a]	----	----	32.8
Barley Hybrids			
Sacramento x Calif. Mariout[a]	----	M21 B 2-7 M	76.1
Sacramento x Hero[a]	----	27-1-563	73.8
Do [a]	----	27-1-566	72.7
Atlas[a]	4118	----	64.1
Beldi[a]	----	----	50.0
OATS			
California Red	1026	1003	108.0
Kanota	839	----	99.1
Ruakura[b]	2025	----	98.4

[a] Duplicate plots

[b] Four 50th-acre plots

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J.W.Baringer (July 31)

Progress of first survey in northeastern Ohio seems to be very slow. Twenty-eight men have been doing first survey in Ashtabula County since July 1, and only 11 per cent of the total area of the county has been covered during this time. Inaccessibility of the territory and unfavorable weather are the factors responsible for the slow progress. The farms are from 60 to 70 per cent wooded. Much of the woodland is slashing, composed of crataegus, trimmings from fallen trees, blackberry briers, white thorns, and weeds all entwined with an abundance of wild-grape vines. A superabundance of rain has formed hundreds of stagnant pools. Deer flies and mosquitoes are more than plentiful and seem especially vicious this year. Barberries are not being found in especially large numbers but enough are being located to warrant the most intensive type of first survey.

Progress of second survey has been rapid compared with first survey. Since July 1 six men have covered 9 per cent of Preble County by second survey using the intensive method. In the second-survey area the woodlands are small and well pastured. Much of the land there is under cultivation. No barberries have been found on second survey in the area which has been covered this year.

The Ohio Division of Agriculture is planning to start three field agents to work with us on barberry eradication about August 1.

Practically all of the wheat, barley, and rye in Ohio has been cut. The cutting of oats is progressing rapidly. Leaf rust has been moderate to heavy on wheat and oats generally over the State. Leaf rust on rye and barley has not been heavy or general. Stem rust on rye, barley, and oats is heavy only near barberries. Stem rust is heavy on wheat near barberries and also rather heavy over parts of two or three counties in central western Ohio at considerable distance from the known location of barberries. Stem rust apparently will reduce yields of wheat, oats, and barley only where the rust became heavy near barberries early in the season. Rye has escaped with no material damage from stem or leaf rust. Stem rust on oats may yet become heavy and general but probably will not, even though recent weather has been very favorable for rust development.

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy [July 23]

Thirty-eight field men are employed in barberry eradication in Michigan. There are six squads of six men each, a publicity man, and a man in charge of the 1-1/2 ton truck. In Leelanau and Antrim counties there are two squads each, located in different parts of the counties and surveying intervening territory.

It has been found very profitable to have our own truck for hauling salt. The truck is in charge of an experienced field man who was a squad leader for two seasons. He understands the problems of the squad leader and attends to the placing of the salt so that it can be distributed with the minimum of work. When dependent upon hired truckers we were forced to adjust our schedule somewhat to their desires.

Since the second of July we have hauled and distributed two carloads of salt. These two carloads represent 60 tons. All of this salt has been applied on barberries. It is evident that this section of Michigan contains many bushes.

Some of the bushes have an exceptionally heavy infection while others just have slight infection. The season has been cold, and there has not been a wide spread of the rust. Heavy infection has been found on quack grass with some rust on rye, wheat, and oats.

(August 1)

First survey continues in Antrim, Benzie, Grand Traverse, and Leelanau counties. The third carload of salt has been ordered. More than 6,000 common barberries have been destroyed. These bushes were found on 24 locations. Twenty-one of the locations contained areas of escaped bushes.

The folly of digging barberries can not be overstressed. Unfortunately, the chopping off of bushes is much worse than leaving the bushes stand, if it were not for the spreading of seeds. Naturally, if a bush is chopped off, it will not produce seeds for several seasons and will not be such a source of early infection. On the other hand, a chopped-off bush may escape the eye of the field scout and soon a clump of bushes will spring up.

Ineffecient digging of a bush also causes serious results. Mr. Cyrus Gray who lives in Section 16 of Long Lake Township in Grand Traverse County, received, in the spring of 1927, a bulletin on barberry eradication. From the illustrations of a typical barberry bush he recognized a shrub growing immediately in front of his farm home as a common barberry. He dug the bush and was satisfied with his job. During the same spring U. S. Highway No. 31, which ran in front of his home, was relocated.

This relocation of the highway made it necessary to make a fill of about half a mile from Mr. Gray's property. A high bank, on which grew the barberry bush which Mr. Gray attempted to dig, was cut down and the dirt from this bank was used for the fill. The roots which Mr. Gray left in the ground were broken up and hauled into the fill. When original survey was made last week, it was necessary to treat 56 fair sized bushes which were growing in the side of the fill. Each one had grown from a fragment of an old root. We have had numerous root spreads by means of stolons, but this is the first half-mile root spread that we have encountered.

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R.M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L. W. Melander (August 2)

Intensive survey was conducted in July in Carver, Hennepin, and LeSueur counties. The three remaining townships in LeSueur County were completed. The resurvey of Nicollet County was completed. The survey of Hennepin and Carver counties progressed very slowly on account of the large amount of timber. In spite of the fact that six men are working in Carver County and 10 men in Hennepin County, it is doubtful if either of these counties will be completed before the end of the survey season.

Several interesting rust spreads have been observed this year, but the most outstanding was that in West Newton Township, Nicollet County, where we had a spread of stem rust from barberry bushes for six miles on wheat and five miles on oats. Three other rust spreads were found in this County, spreading from escaped common barberry bushes.

Barberry demonstrations were conducted at several boys' and girls' club camps. A bush was reported by a 4-H Club boy to the barberry agent in charge of the Houston County camp. Upon investigation, one large bush was found which was spreading rust to the grains and grasses in the community.

Some interesting things are being observed in connection with the intensive survey. In Carver County we are not finding a large number of bushes, but we are finding isolated escaped bushes in the ravines leading into the Minnesota River Valley. In Hennepin County we are finding quite a large number of bushes that have escaped from the numerous landscaped estates in the vicinity of Lake Minnetonka. In July, we found 91 planted bushes, 1,341 escaped bushes, 191 sprouting bushes, 813 seedlings on a total of 88 properties.

Indications are that in 1928 Minnesota will suffer least from black stem rust since 1918. Practically all the grain in the southern half of the State is cut at the present time. Hardly any shriveling of grain from stem rust has been observed.

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel (August 3)

Barberry bushes in Johnson, Saunders, and Merrick counties were found to be spreading black stem rust this season. In Johnson County, a few miles northeast of Virginia, a single bush was found in an ideal position to spread rust. It was growing in a fence row right beside a wheat field. In spite of the dry weather this spring, which was unfavorable to the growth of the rust fungus on the barberry bush, rust had spread through the grain in this field to a distance of 300 yards from the bush at the time the grain was cut.

Stem rust was spreading to both wheat and oats from numerous small bushes, seedlings, and sprouts found on a deserted farmstead east of Ceresco. The leaves on all but the smallest sprigs were heavily rusted. Susceptible grasses around the bushes had become heavily rusted. Wheat in a field to the west was naturally most heavily rusted nearest the barberry bushes. The infection shaded off across the field from 90 per cent prevalence near the bushes to 10 per cent on the west side nearly a quarter of a mile away. An oat field about 10 rods to the east showed considerable rust near the bushes. But on the east and south side there was very little infection.

Observations on 20 large bushes in an orchard located to the north of an adjoining wheat field showed a distribution of rust to the southwest throughout this field. A part of this field was cut early to avoid possible further damage. In fields in Merrick County not near barberry bushes only a trace of rust could be found at the time. Every plant in the portion of the field adjacent to the orchard was rusted with a 10 per cent severity of infection. A severity of five per cent and a prevalence of 100 per cent were noted in a belt of grain a number of rods farther out into the grain. In the next belt the severity was two per cent and the prevalence 90 per cent. Rust occurred on 80 per cent of the stems in the rest of the field, the severity shading off from two per cent to a trace.

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger (July 26)

Field work in barberry eradication is progressing slowly in South Dakota as the result of the intensive type of survey that is being used. The scouts cover all tracts of natural and planted trees and shrubs and all fence rows.

Barberry bushes have been found in every county that is being surveyed this year. In Grant County, which is in the heart of the spring-wheat area, 57 barberry bushes already have been found on seven different farms, while less than three townships have been covered so far. However, some of these bushes were reported by interested people within the county.

In general, the people of the State are giving splendid cooperation. One of the largest department stores in Milbank, Grant County, wrote to the College asking that a barberry display be placed in its windows. Several other business firms have made similar requests. Editors of weekly newspapers also are requesting information concerning barberry eradication.

There will be little or no loss from stem rust over most of South Dakota except in very late fields. The heaviest stem rust found so far is in Grant County and is clearly traceable to the barberries which were found there. Some loss may result in this locality.

Orange leaf rust is general all over the State and fairly severe in some localities. However, it did not appear early enough to cause any noticeable loss. Crown rust of oats is present but is only severe in fields near buckthorn bushes. Brown leaf rust of rye is present in all rye fields but is very light. Only a few pustules of dwarf leaf rust of barley have been found this year.

Wheat scab and root rot will account for some shriveling in the wheat crop this year. These two diseases are present in greater or less quantity in most wheat fields in eastern South Dakota.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue (August 4)

Twenty-two field agents working in squads of four men, one of whom is a squad leader, are making an intensive survey for the common barberry.

They are stationed on second survey in Adams, Kidder, and Pierce counties, and on subsequent survey and resurveys in Grand Forks County, and first intensive strip scouting in Stutsman County of the James River. Not many barberries have been located so far this season. However, good finds have been made, especially one on July 24 near Reynolds in Grand Forks County. The barberries at Reynolds were traced from infection which was noted on the grains and grasses, especially along the main highway within three miles of the planting. That find represents one of the best examples of spread of stem rust from barberries.

It is estimated that more than 500 people from the cities of Grand Forks and Fargo, as well as from the rural communities, visited that location. On August 4, leading business men and farmers in the community of Fargo visited the location and were convinced that barberry is a rust spreader. Mr. Roy Johnson of Casselton, master farmer of North Dakota, said: "The spread of rust from these bushes is conclusive evidence that the common barberry is an important factor in the dissemination of black stem rust. I believe that every effort should be made to cooperate in its eradication." Mr. W. A. Chestnut, Secretary of the Fargo Chamber of Commerce, and Mr. Albert Sinner, one of the largest farmers in Cass County, heartily agreed with Mr. Morton Page, one of the leading land owners and bankers of the State, in his statement that "The fact that the rust has so clearly spread from the barberries to the grasses and then to the neighboring grain fields ought to demonstrate to the most careless observer that there is more to the control of black stem rust by barberry eradication than many people have been wont to believe."

Bushes of this find were shown at the State Fair at Fargo and attracted a great deal of attention. A bush 9 feet high and 6 feet in diameter, plastered with infection and loaded with berries, was placed in front of the Education Building at the Fair grounds. A printed sign 4 x 8 feet told where this bush had been found and invited the public to make a study of the stem rust spread from it. Authorities of the Fair stated that that bush was the greatest attraction on the Fair grounds. In addition to the bush there was a very attractive demonstration in the Education Building. This demonstration also was shown at the Northwest Fair at Minot, the Fair at Grand Forks, as well as at six county fairs.

Harvesting is well started at this time. There is a good crop in North Dakota which undoubtedly will be damaged to a small extent by black stem rust. However, there will be some loss on account of root rot, black chaff, and smut, especially bunt.

The newspapers have carried some very good publicity regarding the progress of the campaign and the barberry finds.

MONTANA

State College of Agriculture, Bozeman, W. L. Popham (July 30)

Comparatively few locations of common barberry are being found in the counties of Montana that are being surveyed this summer. Generally speaking, these counties are sparsely settled and only very little shrubbery of any kind has been planted.

In Butte, where, for many years, no shrubbery or trees were grown because of the high altitude and the smoke from the ore-reduction plants, two properties having barberry bushes were found. The bushes were not large but apparently were in a healthy condition and bearing fruit.

The rust situation in western Montana has not changed to any extent during the past two weeks. There is a general infection of mild severity of leaf rust in all western counties. The epidemic of stripe rust in Flathead County will cause some loss in fields of Velvet Chaff wheat but does not appear to be attacking any of the other varieties of wheat (either winter or spring) in that part of the State. Marquis is the principal spring-wheat crop, and Turkey Red comprises about one-third of the winter wheat. Both these varieties are resistant to the extent that never more than a trace of stripe rust has been observed on them.

A trace of black stem rust has been found in Yellowstone and Ravalli counties, but inasmuch as the spring-wheat crop is developing rapidly it is very improbable that any loss will result in these areas from this source.

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren (August 1)

B. J. Thornton left Fort Collins for Sheridan, Wyo., where he will join Dr. L. R. Hesler, who will accompany him on barberry survey during August. It is planned to make a second survey of Sheridan County, and in addition, resurvey many other counties, and make observations for sprouting bushes, escaped bushes, and seedlings. Some time has elapsed since the original survey was made.

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren (August 1)

In July a large portion of Weld County was scouted. A new area of escaped barberry bushes was found many of which apparently were infected early this spring. They were located in a large grove a few miles east of La Salle. The amount of stem rust in the vicinity of these escaped bushes appeared to be greater than in other places where there were no barberries near by.

Several scouts were transferred to Boulder County for a portion of the month of July and found barberries on four properties. The men returned to Weld County for the remainder of the season. With the present force in Weld County in August, it is hoped to complete that part of the program which was outlined at the beginning of the field season.

Winter wheat has all been cut and has escaped rust damage. Only a bare trace of stem rust was present. Much of the spring wheat has been cut; it also escaped rust damage. However, on some of the late spring wheat there will be a trace of stem rust damage. Oats and barley have but a trace of stem rust this year, and no damage will result. Leaf rust appeared later this year, developing to some extent, but did not cause very much damage.

PLANT INDUSTRY

C E R E A L C O U R I E R

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Bureau of Plant Industry, U. S. Department of Agriculture
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August 20, 1928
Personnel (Aug. 11-20) and Field Station (Aug. 1-15) Issue

PERSONNEL ITEMS

J. Allen Clark, senior agronomist in charge of western wheat investigations, returned to Washington on August 17, after an extended field trip in the interests of western wheat investigations. Since July 4, Mr. Clark has visited the following stations: Aberdeen, Idaho, Logan, Utah, Cheyenne, and Sheridan, Wyo., North Platte, Nebr., St. Paul, Minn., Fargo, Mandan, Dickinson, and Langdon, N. Dak., Brookings, Redfield, and Highmore, S. Dak., Bozeman, Moccasin, and Havre, Mont. Mr. Clark also visited the private wheat-breeding farms of Atkins & Sons, Frederick, S. Dak., and E. S. McFadden, Webster, S. Dak. Several days were spent with Mr. Quisenberry at Bozeman, Mont., studying awnedness inheritance on F_3 hybrid material of the Sonora-Quality cross. Considerable time also was spent at the Northern Great Plains Field Station, Mandan, N. Dak., with Mr. Ausemus in studying inheritance resistance of stem rust on F_3 material of three crosses, viz: Hope x Marquis, Hope x Ceres, and Hope x Reliance. Certain strains of this material have been immune from rust for two generations.

At Langdon, N. Dak., a durum wheat nursery of over 1,000 rows of varieties, hybrids, and foreign introductions was studied for leaf rust damage, strength of stems and stem-rust resistance, in company with Dr. L. R. Waldron of the North Dakota Station.

At Minneapolis, Minn., Mr. Clark conferred with Mr. H. R. Sumner, newly appointed Director of the Spring Wheat Crop Improvement Association.

Miss Marion A. Griffiths, associate pathologist in cereal-smut investigations, returned on August 19 from an extended field trip covering experiment stations in the Pacific Northwest and the North Central States, where she took notes on wheat-bunt nurseries and cereal smuts.

Dr. V. F. Tapke, associate pathologist in cereal-smut investigations, returned on August 14 from the Sherman County Branch Station, Moro, Oreg., and Aberdeen Substation, Aberdeen, Idaho, where he has been studying the life history, distribution and control of smuts of small grains.

MANUSCRIPTS AND PUBLICATIONS

Galley proof of article entitled "Inheritance of Resistance in Oats to Puccinia Graminis Avenae," by S. M. Dietz, for publication in the Journal of Agricultural Research, was read August 18.

Galley proof of Farmers' Bulletin entitled "Harvesting Grain Sorghums," by J. H. Martin, Office of Cereal Crops and Diseases, L. A. Reynoldson and B. E. Rothgeb, Bureau of Agricultural Economics, and W. M. Hurst, Bureau of Public Roads, was read August 18.

The article entitled "Changes in the Buffer System of the Wheat Plant During Its Development," by Annie M. Hurd-Karrer, appears in Plant Physiology 3: 131-153. 1928. (Received August 13)

The article entitled "Effect of the Continuous Selection of Large and Small Wheat Seed on Yield, Bushel Weight, Varietal Purity, and Loose Smut Infection," by J. W. Taylor, appears in the Journal of the American Society of Agronomy 20 (8): 856-867. August, 1928. (Received August 20)

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (August 17)

Preparations for fall seeding are in full swing.

The unusually heavy rainfall of August 12 and 13 caused heavy damage to corn and garden crops. The total rainfall for the two days was 8.28 inches, an amount greater than obtained in any one month since records have been taken at Arlington Experiment Farm, or since 1912. The rainfall for August 12 was 6.30 inches.

The grain yields of the winter oat varieties for 1928 are below average. Despite severe winter injury, due to January freezes, the varieties Lee and Custis outrank in grain yield the supposedly more hardy Winter Turf strains.

Average yield of winter oat varieties grown in triplicate 40th-acre plots, compared with the yield of check plots, at Arlington Experiment Farm in 1928

Variety	C.I.No.	Yield (Bu.per acre)	Yield Check plot (Bu. per acre)	Gain or loss of variety compared to check (Bu.per acre)
Lee	----	57.4	50.6	+ 6.8
Custis	----	55.6	54.9	+ .7
Bicknell	206-155	60.7	61.1	- .4
Randolph	----	48.8	50.6	- 1.8
Winter Turf	541-4	51.5	54.9	- 3.4
Do	435-4	50.3	54.9	- 4.6
Selection	699-2011	45.3	50.6	- 5.3
Do	1001-D1-2B	44.9	50.6	- 5.7
Winter Turf	431	48.5	54.9	- 6.4
Selection	699-202	46.5	54.2	- 7.7
Culberson	273-I-14	51.9	61.1	- 9.2
Jackson	----	44.7	54.2	- 9.5
Red Rustproof	1815	50.5	61.1	-10.6
Hatchett	----	37.2	50.6	-13.4
Fulghum	708	32.7	54.2	-21.5
Kanota	----	24.8	54.2	-29.4
Culberson[1/]	274	55.1		

1/ Average of 15 check plots.

Mixtures of equal parts of weight of wheat, oats, and barley seeded at eight pecks per acre gave less grain than wheat sown alone. The seedings were made too late for best development of the oat and barley plants. Winter-killing of the two latter crops was severe both in the mixtures and when seeded alone.

Average grain yields in pounds per acre of crop mixtures sown on two dates, compared with the same crops sown alone at Arlington Experiment Farm in 1928

Date of Seeding	Average yield of mixtures (Pounds)	Yield of crops sown alone Wheat (Lbs.)	Barley (Lbs.)	Oats (Lbs.)
October 15	1,307 1/	1,836	878	1,059
October 22	1,715 2/	1,926	1,099	755

1/ By weight, mixtures contained the following percentages: Oats 6.5, Barley 12.2, Wheat 81.3.

2/ By weight, mixtures contained the following percentages: Oats 4.9, Barley 8.2, Wheat 86.9.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love) (August 14)

Wheat and barley harvest has been completed in good shape and oats harvest will be completed today. The weather recently has been rather unfavorable to oats, and much of the crop was blown down by winds and storms. Some went down very early and in such instances the yield will not be very satisfactory. While it was unfortunate that so much of the crop went down, it emphasized the stiffness of straw which is one of the important characteristics of the Upright variety. This variety stood exceptionally well. The wheat plots have been threshed. A new hybrid of great promise, a cross between Valley and St. Louis Grand Prize, outyielded Forward again this year by about 12 per cent. This hybrid is very winter resistant and has a stiff straw and a red kernel.

The harvest of oat and barley plots in the State is now under way, as well as the inspection of fields of these crops which are being grown for seed. Much interest is being manifested by seedsmen who are now buying quantities for sale next spring.

Dr. M. N. Levine was at the Station to take readings on the rust nursery on August 3 and 4; Prof. W. J. Squirrel visited our experiments on August 13.

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg) (August 16)

Since the termination of the hand-pollinating season about the middle of July, notes on plant characters and diseases have been recorded on the earrows and individual plants in the corn breeding plots. Frequent showers have interfered somewhat with the progress of taking notes. Rains have occurred on 15 of the 31 days, with a total rainfall of 6.38 inches. Maximum temperatures for the last half of July (85 to 93 degrees F.) were considerably lower than the maximum temperatures for July 1 to 15 (90 to 97 degrees F.), and slightly lower for August 1 to 15 (88 to 94 degrees F.). Minimum temperatures have been remarkably uniform ranging from 70 to 75 degrees F.

The frequent rains have kept the plants green later than usual. Many of the inbred strains, however, have now matured. Harvesting will begin within the next few days.

Dr. C. T. Dowell, formerly Dean of Agriculture, Oklahoma A. & M. College, and Director of the Oklahoma Agricultural Experiment Station, assumed his duties as Dean of Agriculture, Louisiana State University, and Director of the Louisiana Agricultural Experiment stations, on August 1.

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L.J.Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins) (August 16)

The weather at Ames has been almost ideal this year for the hand-pollinating work. There was plenty of moisture just before tasseling so that the corn came on rapidly and there have been very few rains since to interfere with the work. At the present time the selfing is completed and only a small amount of crossing in a late planting remains to be done. The selfing was completed the earliest this season of any of the seven years that the investigations have been in progress. It was completed 15 days earlier than last year.

The corn on the Experiment Station looks exceedingly well. The ample supply of moisture seems to have caused the corn to grow taller than usual. Many of the mid-season and late F_1 crosses are too tall and their ears too high for convenient husking. Acre yields on the Experiment Station should be from 30 to 40 per cent higher than those of last year.

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer) (J. F. Trost) (August 16)

The corn crop has made excellent growth throughout Indiana during the first part of August. The crop is generally well past silking at this time. Fields which displayed symptoms of nitrogen starvation before tasseling are entering the stage of bottom leaf firing. This condition is particularly prevalent this year on corn planted on land where wheat had been sown but was lost by winterkilling.

The pollination season on the breeding plots is rapidly drawing to a close. Some late strains of Reid and Johnson County White are silking. Early and late strains and early and late plantings converged more than usual in silk emergence. However, unusually fine weather was a contributing factor for pollinating. Wind velocities were very low during periods of maximum pollen shedding and a greater percentage of self pollin-

Sweet corn recombinations and parent selfed lines are being harvested and tested for quality. Separate determinations of canning and of seed quality are being made this year.

Dr. C. M. Woodworth and F. L. Winter of the University of Illinois inspected the breeding plots on August 15. The Seed Committee of the Indiana Canners' Association inspected the sweet corn plots on August 14. Dr. I. L. Baldwin of the University of Wisconsin was at the Station on August 16 to speak before the American Soybean Association meetings. He made a special trip through the nutritional testing plots.

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (August 15)

The first half of August was a continuation of the hot, dry weather which began during July. Sorghums curl from the heat during the day, but recover their shape by morning. The yields, no doubt, have been decreased by the drought., especially in the earlier seedings.

Most of the varieties of the May 26 seeding are heading and headed, but are not developing seed normally. Bagging of heads for seed is being completed in order that good seed will be had for another year.

From August 6 to 9, the writer visited the Field Station at Lawton, Okla., and saw some very good plots of kafirs, Dwarf hegari, and kaferita. The best yields at Lawton will be from the April 15 date of seeding. Crops between Woodward and Lawton are spotted this year. In most places a rain would be welcome.

Unless a good rain occurs soon, the principal demonstration on Field Day, September 8, will be the effects of a severe drought.

Maximum temperatures, 98 degrees on the 7th, 8th, and 9th; minimum, 61 degrees on the 5th. Precipitation, 0.28 inch, which fell in two showers.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J.H.Parker) [August 17]

The following table gives the yields of winter wheat varieties grown in triplicate 40th-acre plots at the Agronomy Farm in 1928 as reported by Prof. S. C. Salmon.

Yields of winter wheat varieties grown on the Agronomy Farm, Manhattan, Kans., in 1928

Variety	C.I.No.	Kans.No.	Yield (Bu. per acre)
Hard Wheats			
Tenmarq**	6936	439	50.45
Blackhull	6251	343	46.82
Kanmarq	6937	440	46.48
Kanred Checks	5146	2401	46.44
Oro	8220	2595	46.35
Marquis x Kanred	----	443	46.28
Red Hull	----	487	46.02
Kharkov	2193	382	45.48
Turkey	1558	570	44.68
Nebraska No. 6	6249	321	44.48
Newturk	6935	2536	44.42
Superhard	8054	470	43.82
P1066 x Marquis	----	442	43.68
Fulhard	8257	2594	43.23
Hussar	4843	353	42.75
Regal	7364	2609	42.02
Early Blackhull	----	483	38.88
Early Kanred	----	2599	33.21

**In another test, the average yields of 10 40th-acre plots each of Kanred and Tenmarq were 50.08 and 50.34 bushels, respectively.

Continued

Variety	C.I.No.	Kans.No.	Yield (Bu. per acre)
Soft Wheats			
Kanred Checks	5146	2401	47.76
Kawvale	8180	2593	46.82
Menno	----	496	44.62
Michigan Wonder	----	2533	42.28
Fulcaster	6471	317	41.62
Harvest Queen	6199	19	40.42
Currell	----	----	36.75
Nebraska No. 28	5147	34	32.34
Single Plot Test of New Hybrid Wheats			
Kanred x Hard Federation*	----	2627	54.36
Prelude x Kanred	----	2628	53.02
P1066 x Prelude	----	2629	49.69
Blackhull (check)	6251	343	48.85
Kanred (check)	5146	2401	48.09
Kanred x Hard Federation	----	2625	48.02
Do	----	2626	47.02
Minhardi x Minturki	8034	419	41.35

*Segregating for awn type.

Agricultural Experiment Station, Manhattan (Corn Breeding, A.M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (August 15)

The weather for the last two weeks of July and the first week of August was very unfavorable for wheat harvesting and threshing operations. Heavy rains during this period have delayed "combine" harvesting. Considerable wheat is uncut in the western part of the State and weed growth is making it extremely difficult to handle. The heavy rains have caused a great deal of high water and many rivers are out of banks. A large corn acreage in the river bottoms is flooded and there has been considerable loss in stacked and shocked small grains. In spite of these adverse conditions, the estimated yield of wheat for the State will be 175,000,000 bushels.

The prospects for a large corn crop are very good. The crop for the most part is past the tasseling stage and is in excellent condition. Corn smut is much more prevalent and severe this year than it was last year.

The leaf rust nursery plots have been harvested and threshed. Seed is being packeted for the 10 uniform leaf rust nurseries which will be sown in the southwestern great plains this fall. Notes and data are being summarized and will be available soon to cooperators.

The past season has been a very successful one for leaf rust investigations in this area. Good infections developed at practically all of the 10 stations and excellent rust notes were obtained. Hearty cooperation and interest in this work was shown by experiment station officials in Texas, Oklahoma, Nebraska, and Kansas, and the project is thriving as a result.

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (August 16)

The first 15 days of August were relatively free of rainfall compared to June and July, so that tillage operations have been possible. Moderate temperatures have prevailed. Corn and sorghums have made excellent growth. Corn gives promise of being one of the largest crops ever recorded in northwestern Kansas. The crop is almost safe from high temperatures and extremely dry weather.

The following yields of wheat were obtained in the varietal experiments on the Cereal Project at the Hays Branch Station in 1928. The yields are averages of four plots but the figures are subject to final checking.

Variety	C.I.No.	Yield (Bu. per acre)	5-yr. Average (Bu. per acre)
Kharkof, Hays No. 2	6686	42.4	24.3
Oro	----	41.2	----
Nebraska No. 6	6249	40.7	24.4
Kharkov	1442	40.2	23.4
Kanred (Check)	5146	39.5	22.6
Tenmarq	6936	39.1	----
Kanred (Check)	5146	38.9	----
Blackhull	6521	38.4	25.2
Pesterboden	----	38.3	----
Nebraska No. 28	5147	37.8	24.2
Superhard	8054	37.8	----
Karmont	6700	37.3	21.4
Nebraska No. 60	6250	37.1	23.1
Improved Turkey	5592	36.9	22.6
Kharkof, Mont. No. 36	5549	36.3	22.9
P 1068 x Preston, Kans. 441	----	36.3	----
Turkey	1558	36.3	21.4
Newturk	6935	35.8	21.0
Minturki	6155	35.7	20.3
Altera	5791	35.4	21.9
Sherman	4430	34.6	22.5
Hussar	4843	34.7	22.3
Fulcaster	5471	34.2	21.2
Harvest Queen	6199	33.8	20.5
Regal Turkey	8364	32.9	----
P1068 x Preston, Kans. 444	----	37.8	----

The early maturing varieties, such as Blackhull and Nebraska No. 28, appeared to have been injured somewhat by the drought in late May. On June 2, a heavy rain fell which seems to have been more beneficial to the medium-early maturing varieties than to the extremely early varieties.

Tillage work on the project is progressing nicely. About 700 sorghum heads have been selfed and others are being bagged as rapidly as they emerge and are found desirable.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague) (August 18)

The weather for the period ended August 15 has been hot and dry. No precipitation has been recorded this month. In spite of the dry weather, corn is looking well and gives promise of a good yield.

Threshing of varietal plots was completed August 14. Nursery threshing is well under way. Yields of spring grain were slightly above average. The yields of winter wheat were very good.

Corn pollination begun on July 30 has just been completed. Some of the inbreds and their F hybrids look very promising.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, E. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (August 16)

During the first week of August a total of 1.62 inches of rain fell. Since that time the weather has been hot and dry with local thunderstorms in the County, but there has been no precipitation of importance at the Substation.

The general harvest of wheat in this locality began about 10 days ago and the greater part of that crop has been harvested. Some combines are operating in the County.

The harvesting of cereal varieties in plots and nursery at the Substation is nearly completed. Rotation plots also are practically all harvested.

With continued favorable weather, threshing at the Substation should begin next week.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (August 17)

The weather during the first half of August was generally dry and warm and exceptionally favorable for field work. The rainfall during this period, amounting to 1.70 inches, occurred before August 6. The maximum temperature for this period was 102 degrees F. on August 11, and the minimum temperature was 56 degrees on August 3 and 15, respectively.

Flax sown April 21, April 30, and May 10 in the date-and-rate-of-seeding and tillage experiment was harvested August 8. Flax sown May 21 and 31 is ripening rapidly.

Poisoned bran will be distributed tomorrow to destroy grasshoppers which are becoming numerous and are doing considerable damage.

Flax wilt and rust are more prevalent this year than in any year since the flax work was begun at this Station.

The F_3 planting from the cross Rio x Burbank is showing very definite segregation for resistance to wilt and immunity and resistance to rust. Apparently about half of the material on flax-sick soil has already succumbed to wilt. The duplicate planting on uninfected soil is furnishing complete data on rust infection.

Visitors at the Station since the last report included J. Allen Clark, A. C. Dillman, and J. H. Martin of the Office of Cereal Crops and Diseases; L. R. Waldron and H. L. Walster of the North Dakota Agricultural College, and C. H. Clark, formerly of the Office of Cereal Crops and Diseases and now manager of the John L. Kellogg Seed Co., Chicago, Ill.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (August 17)

The weather during the first part of August has been ideal for harvesting. All cereal crops in the plots and nursery on the Station have been harvested.

Grain ripened very unevenly this year because the late tillers developed on the plants after the late spring rains. The yields of all grains in the Cereal Project will be above the average.

Harvesting in this locality is well under way. Some of the farmers have practically completed harvesting. The farmers found it impossible in some cases to cut fields of grain with binders because of weeds and were forced to head the grain. A few combines are being used in the area south of Mandan. The wheat is headed first, allowed to dry in the windrow a few days, then picked by the combines. This method seems very satisfactory to both farmers and elevator men.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens) (August 9)

The weather in eastern Oregon during July was comparatively cool until the 21st. From the 21st to the 26th occurred some of the hottest weather ever experienced in this section. The highest temperature at Moro was 110 degrees F., 5 degrees higher than any temperature before recorded at the Station. The extremely hot weather did no damage to cereals as both spring and winter wheats were ripe. There was no precipitation during the month.

The threshing of the field plots on the Station is completed and the nursery threshing began today. Yields of the winter grains were a little higher than expected. The following is a brief summary of results obtained from some of the tillage experiments with Turkey winter wheat after fallow:

Plowed April 1*	41.7 bushels	per acre
Plowed May 1*	40.8	Do
Plowed June 1*	30.8	Do
Plowed early in fall**	40.5	Do
Plowed late in fall**	40.1	Do

*Average yield of eight 1/10th-acre plots with various fallow treatments.

**Average yield of four 1/10th-acre plots.

The following results were obtained with winter wheat sown with a furrow drill and a disk drill in 1/10th-acre plots:

Variety	Furrow drill (Bu. per acre)	Disk drill (Bu. per acre)
Federation	38.9	40.3
Oro	37.7	37.2
Oro	33.5	41.2
Oro	38.5	45.0
Fortyfold x Federation (C.I. 8247)	34.8	41.7
Do (C.I. 8247)	34.7	44.3
Average	36.3	41.6

The following table shows the yields obtained in the winter wheat varietal experiments at Moro. The varieties are listed in planting order.

Table. Acre yields of winter wheat varieties in bushels per acre grown in triplicate 1/20th-acre plots at the Sherman County Branch Station, Moro, Oreg., in 1928

Variety	C. I. No.	Yield (Bu. per acre) Series 1	Series 2	Series 3	Average	Rank
Federation	4734	31.7	29.7	34.3	31.9	20
Arcadian x Hard Federation	8246	42.8	38.0	39.7	40.2	6
Do	1992A4-4-6-1	41.7	39.7	40.0	40.5	4
Fortyfold x Federation	8247	40.7	37.0	40.7	39.5	7
Kanred x Marquis	8245	39.8	40.0	37.3	39.0	8
P1068 x Preston	8244	37.7	40.0	36.3	38.0	13
Ridit	6703	34.3	35.2	34.3	34.6	17
Turkey x Florence	G326-1	34.7	33.7	31.0	33.1	19
Do	G326-S	33.3	34.3	32.7	33.4	18
Hybrid 128 x Fortyfold	1997A4-3-3-2	46.0	42.3	39.0	42.4	1
Turkey	1571	39.0	39.3	36.7	38.3	11
Kanred	5146	41.7	41.3	38.0	40.3	5
Kharkof	8249	40.7	42.0	39.3	40.7	3
Argentine	1569-2	42.0	42.3	40.3	41.5	2
Regal	7364	40.0	34.7	36.0	36.9	15
Local Turkey	4429	38.3	39.3	38.3	38.6	9
Oro	8220	37.3	38.0	38.3	37.9	14
Hybrid 128	4512	37.3	41.0	37.0	38.4	10
Albit	8275	35.0	38.7	36.7	36.8	16
White Odessa	4655	35.0	40.0	39.3	38.1	12
Fortyfold, Selection 29	----	----	----	36.4		
Fortyfold, Selection 43	----	----	----	39.2		
Fortyfold, Selection 54	----	----	----	37.0		
Average					38.0	

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (August 14)

The weather for August thus far has been favorable for the development of the rice crop in California. Most of the commercial rice fields are, however, unusually weedy this year. Water grass, water plantain, cattails, red stem, and other minor rice field weeds are present in abundance this season. It is expected, therefore, that the acre yield will be below normal, for the weeds have checked the growth of the rice crop.

The early-maturing varieties, Colusa and Onsen, on the commercial fields are nearly fully headed and the midseason varieties, Caloro and Improved Caloro, are beginning to head about one week earlier than normal.

At the Station the early-maturing varieties in the plots and nursery are fully headed, and the midseason varieties are starting to head. The Station plots seem to be nearly normal, but the growth of the nursery rows is rather poor this year.

The California rice market remains rather weak and inactive.

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L.W.Melander

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

U.S.D.A.
SEP 11 1928
PLANT INDUSTRY

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 21

August 31, 1928
Personnel (Aug. 21-31) and Project Issue

PERSONNEL ITEMS

Charles E. Chambliss, associate agronomist in charge of rice investigations, left Washington on August 29 to visit field stations in Louisiana, Texas, Arkansas, Missouri, Illinois, Pennsylvania, and Georgia. He will confer with experiment station officials and others interested in rice investigations. He will also inspect the experiments being conducted at the various stations. Mr. Chambliss will be in the field about six weeks.

Dr. Hurley Fellows, associate pathologist in charge of the cooperative investigations with wheat foot rots at Manhattan, Kans., made an official stop in Washington on August 21 while on a vacation trip. He conferred with Bureau and Office officials relative to the foot-rot situation in various parts of the country, reporting particularly on the recent serious outbreaks in Oregon, Washington, Montana, Colorado, and Oklahoma.

R. W. Leukel, associate pathologist in charge of nematode investigations, returned to Washington on August 31 from Madison, Wis., where he has been taking notes on the effect of various dust fungicides on disease control and yield in barley and wheat. He also collected diseased seed for further study along this line. In company with Dr. J. G. Dickson and associates of the Wisconsin Agricultural Experiment Station he surveyed a considerable portion of the small grain district in southern Wisconsin. Stripe rust of barley was present in almost all barley fields and averaged about five to six per cent in severity, while some fields ran as high as ten per cent. Barley covered and loose smuts were almost negligible but oat smuts were very destructive, many fields having over 40 per cent of the plants infected. Scab was very severe on barley, especially in fields that had been in corn the previous year. At the time of the survey, grain gave promise of a good yield on the whole, although barley was badly lodged.

MANUSCRIPTS AND PUBLICATIONS

39 A manuscript entitled "Plant Characters and Yield in Grain Sorghums," by John H. Martin, was approved on August 24 for publication in the Journal of the American Society of Agronomy.

40 A manuscript entitled "An Inheritance Study of the Distribution of Vitamin A in Maize," by S. M. Hauge and John F. Trost, was approved on August 24 for publication in the Journal of Biological Chemistry.

41 A manuscript entitled "Inheritance of Yield and Protein Content in Crosses of Marquis and Kota Spring Wheats Grown in Montana," by J. Allen Clark and Karl S. Quisenberry, was submitted on August 25 for publication in the Journal of Agricultural Research.

42 A manuscript entitled "The Fulghum Oat in California," by T. R. Stanton and V. H. Florell, was submitted on August 31 for publication in the magazine California Cultivator.

Galley proof of article entitled "The Intensive Production of Single Crosses Between Selfed Lines of Corn for Double Crossing," by F. D. Richey, for publication in the Journal of the American Society of Agronomy, was read on August 23.

The article entitled "Differences in Resistance to Bacterial Wilt in Inbred Strains and Crosses of Dent Corn," by C. S. Reddy and J. R. Holbert, appears in the Journal of Agricultural Research 36 (10): 905-910, figs. 1-2. May 15, 1928. (Received August 22) (The investigations conducted near Bloomington, Ill., were in cooperation with Funk Bros. Seed Company.) (Mss. received by the Journal on March 2, 1928.)

The Phytopathological Note entitled "Grated Carrot Agar Favorable for Studies of Pythium," by Helen Johann, appears in Phytopathology 18 (8): 710. August, 1928. (Cooperation between the Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station.)

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PLANT INDUSTRY

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 22

September 10, 1928
Personnel (Sept. 1-10) and Field Station (Aug. 16-31) Issue

PERSONNEL ITEMS

Dr. C. R. Ball, principal agronomist in charge, returned to Washington on September 2 after traveling some 5,000 miles by automobile inspecting the progress of the barberry eradication campaign in Nebraska, South Dakota, North Dakota, Minnesota, Iowa, Illinois, Wisconsin, and Michigan.

While there is a long and strenuous task ahead, the results obtained to date are distinctly encouraging. The trip was made in company with National and western State Leaders. Following a similar trip of the eastern Leaders last year, it has served to bring about a much more intimate and uniform knowledge of the problem on the part of the entire administrative force. This is increasingly important as the methods of survey are becoming more intense. One of the most striking features of the campaign this year was the ability to determine rust spreads from individual bushes or plantings even in the western States. Large numbers of farmers and business men in the Dakotas were able to see what a single bush or a pair of bushes is capable of doing to grain crops for several miles around.

F. A. Coffman, associate agronomist in oat investigations, returned to Washington on September 1. He left Aberdeen, Idaho, on August 20, and stopped at experiment stations at Laramie and Cheyenne, Wyo., Colby and Manhattan, Kans., and Ames, Iowa. Hail storms had damaged the small grain crops to some extent at Laramie, and dry weather had injured the later-maturing cereals at Cheyenne. At Colby corn and sorghum were in excellent condition. The prospects for the corn crop throughout the Corn Belt are in general very good.

Gordon C. Curran, associate pathologist in barberry eradication, returned to Washington on September 6. In August Mr. Curran acted as subject-matter adviser to the Department motion picture party. Motion pictures were taken in North Dakota, Minnesota, Wisconsin, and Ohio. Scenes of every description were photographed, which will be used in making up two barberry-eradication pictures. It is hoped that these pictures will be available for circulation by the first of the year.

Miss Marion A. Griffiths, associate pathologist in cereal-smut investigations, spent September 10 at Gettysburg, Pa., inspecting a wheat-smut-control train operated by the Pennsylvania State Department of Agriculture in cooperation with the Reading Railroad.

M. A. McCall, principal agronomist in charge of the agronomic section, will leave Washington on September 12 to inspect cooperative cereal experiments and consult with field personnel and officials of agricultural experiment stations in Illinois, Iowa, Missouri, Kansas, Texas, Oklahoma, Idaho, California, Oregon, Washington, Montana, North Dakota, and Minnesota. Mr. McCall will return to Washington the latter part of October.

Dr. E. R. Ranker, associate physiologist in corn-smut investigations, has been authorized to conduct his work, with headquarters at the University of Chicago, for the period from September 10, 1928, to June 15, 1929. Dr. Ranker will consult with specialists in the physiology of disease resistance at the University of Chicago and conduct research in the laboratories of the University of Chicago, Northwestern University, and the University of Illinois.

B. E. Rothgeb, assistant marketing specialist in the Bureau of Agricultural Economics, returned on September 5 from Devils Lake, N. Dak., after a month's study of agronomic phases of the cooperative combine-harvester project in the States of North Dakota and Minnesota. Mr. Rothgeb, who represented the Office of Cereal Crops and Diseases, was associated with L. A. Reynoldson, of the Bureau of Agricultural Economics, and W. R. Humphries, of the Bureau of Public Roads.

The weather was unusually wet and interfered seriously with the harvest operations around Fargo and to a lesser extent outside of the Red River Valley.

VISITORS

Hon. Sydney Anderson, President of the Millers' National Federation, 616 Mills Building, Washington, D. C., visited the Office on September 10.

Dr. Phil. Albert Volkart, Director of the Swiss Experimental Station for Agriculture, Oerlikon-Zürich, was an Office visitor on September 6. Dr. Volkart is interested in the investigations conducted by this Office with wheat, oats, barley, and rye.

MANUSCRIPTS AND PUBLICATIONS

43 A manuscript entitled "Spacing and Date of Seeding Experiments with Grain Sorghums," by John H. Martin and John B. Sieglinger, was submitted on September 1 for publication as a Technical Bulletin.

Colo. Agr. Expt. Sta. Bul. 329 entitled "Colorado Wheat Varieties," by Alvin Kezer, F. A. Coffman, D. W. Robertson, Dwight Koonce, and G. W. Deming, was received late in August, bearing date of January, 1928. (55 pp., 9 figs.) (This bulletin is the result of experiments carried by the Agronomy Section, Colorado Experiment Station at Fort Collins and Fort Lewis and by the Office of Cereal Crops and Diseases, at Akron, cooperating with the Office of Dry Land Agriculture and the Colorado Experiment Station.)

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H.F.Stoneberg

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L.J.Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert) (September 4)

We hope to have our equipment for producing artificially low temperatures in operation by the latter part of September. The framework for supporting the overhead tracks already has been set up in the field. The refrigerating chamber has been completed for some time. The Illinois Power and Light Corporation is installing the transformer in the field today. We hope to move the refrigerating chamber to the experimental plots tomorrow.

Dr. Burlison is going to be with us again tomorrow to witness the initial performance of this equipment for which we have planned together during the past several months. Up to the present time the University of Illinois has contributed a little more than $500 on the construction and operation of this equipment.

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains) (September 4)

The threshing of rod-row material of the small grains was finished August 12. As a result of winterkilling, winter wheats gave very low yields. As a result of the epidemic of scab in barley and spring wheats, yields of the more susceptible varieties were very low. Several varieties of wheat and barley that were remarkable for the small amount of scab in the nursery were outstanding for yield this year. Complaints have been coming in from all over the State as the result of feeding barley to hogs. The hogs either refuse to eat the barley or if it is eaten they become sick. Specimens of barley feed have all shown a large percentage of scabbed kernels. Of course, it is not certain that scab is responsible but it is suggestive that this trouble should coincide with the unusual development of scab.

In the corn-rust plots, blossoming started July 18. Mr. Bockstahler, with the assistance of two boys, was kept busy for three weeks pollinating. Pollinations were nearly all completed by August 18. The weather was unusually fine during this period and practically no bags were lost by storms. Selfs were made in 125 crosses to furnish F_2 material for greenhouse studies of the inheritance of resistance to the various physiologic forms of Puccinia sorghi. In addition to a number of selfs in 101 inbred lines a number of crosses were made between various types to furnish material for further genetical studies.

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (September 1)

The weather of the last half of August was drier than that of the first half of the month. Row crops have stayed alive but made very little growth. Some of the earlier sorghums are ripening, but the yields will be low. Broomcorn is short and irregular in heading.

A. F. Swanson of Hays, Kans., was a station visitor on the afternoon of August 31.

Maximum temperature, 100 degrees on the 28th; minimum 51 degrees on the 24th. Precipitation, 0.07 of an inch on the 28th; total for August, 0.35 of an inch.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague) (September 1)

The weather continues dry. The days are warm and the nights cold. Some frosts have been reported but none at the Station as yet. South of the station for several miles, about half of the corn has been killed by frost.

Considerable difficulty has been experienced with the small engine used to run the nursery thresher and as a result considerable threshing remains to be done. The yields of spring wheat and oats will be the highest of any year since the nursery work was started.

On August 24 the maximum temperature was 95 degrees; the minimum temperature for the same day was 34 degrees. While this is an extreme fluctuation, the daily range in temperature has been quite high.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (August 31)

Threshing at the Substation was begun last week but has been interrupted somewhat by rainy weather. A total of 1.76 inches of rain fell during the past week and delayed threshing in this vicinity for a few days. This is the only rain of importance since the first week in August when 1.62 inches fell. Between these two rainy periods there were three weeks of weather favorable for harvesting operations. Nearly all of the large grain crop in this district has been harvested without loss except from local hailstorms.

Threshing in this vicinity is just well started. Average yields of about 15 bushels per acre of wheat are reported with one yield of Marquis as high as 35 bushels per acre.

Varietal plots of wheat and rye at the Substation and most of the rotation plots have been threshed. In the rotation plots the highest yield of Victory oats was 101.3 bushels per acre. The yields obtained from the varietal plots of spring wheat are given below. The common wheats ranged from 30.6 bushels for Reliance Sel. No. 16 to 19.5 bushels for Reward, while the durums varied from 28 bushels for Akrona to 22.8 bushels for Nohola. In general, the later varieties yielded relatively better than usual, having received greater benefit from the June rains which began too late to be of great benefit to the earliest varieties.

K. S. Quisenberry left today after helping to thresh, prepare for seeding, and seed the winter-wheat nursery. The seeding of the latter was completed today.

Other official visitors during August were J. Allen Clark, Dr. J. H. Martin, Dr. H. V. Harlan and family, Miss Martini, W. Butler, Prof. L. R. Waldron, plant breeder, and E. G. Booth, extension agronomist at the North Dakota Agricultural College.

Acre yields of spring-wheat varieties grown in quadruplicate 56th-acre plots on the Dickinson Substation in 1928

Group and Variety	C.I.No.	Acre yield (Bu. per acre)
Common		
Reliance Sel. No. 16	----	30.6
Reliance	7370	30.1
Red Fife	3329	28.9
Power Fife	3697	27.6
Haynes Bluestem	2874	27.6
Supreme	----	27.0
Ceres	6900	26.9
Marquis x Kota 1656.97	8005	26.0
Hope	[illegible]	25.8
Preston	3081	24.7
Kota	5878	24.4
Marquis	3641	24.2
Marquis x Kota 1656.84	8004	24.0
Garnet	8181	22.8
Marquillo	6887	22.7
Marquis x Kota 1656.85	----	21.1
Progress	6902	20.8 (Only 1 plot)
Ruby	6047	20.2
Quality	6607	19.7
Reward	8182	19.5

Continued

Group and Variety	C.I.No.	Acre yield (Bu. per acre)
Durum		
Akrona	6881	28.0
Kubanka Sel. 132	----	26.6
Kahla	5529	26.4
Mondak	7287	26.4
Kubanka	1440	26.4
Nodak	6515	26.1
Pentad	3322	25.1
Monad	3320	24.0
Mindum	5296	23.5
Nohola	8025	22.8

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (September 1)

The weather of the last 15 days of August has been ideal for the harvesting and threshing of small grains. Temperatures have been moderate. The maximum temperature was 86 degrees on August 18; the minimum 37 degrees on the 22nd and 23rd. Frost occurred in the lowlands on the night of August 22. Corn and some of the more tender vegetable crops were injured. The precipitation was 0.54 of an inch, which fell in four showers.

Threshing of the varietal plots and the nursery has been completed.

The following yields were obtained in the varietal experiments on the Cereal Project in 1928. The yields are the average of three plots.

Variety	C.I.No.	Average yield (Bu. per acre)
Wheat (Common)		
Ceres	6900	24.4
Kanred x Marquis 1718B8-11-22	8384	23.8
Reliance	7370	23.4
Kanred x Marquis II-17-40	8018	23.1
Marquis x Kota 1656.84	8004	23.0
Marquis x Kota 1656.85	8385	22.7
Kota	5878	21.9
Supreme	8026	21.0
Marquis	3641	20.5
Marquillo	6887	20.1
Hope	8178	19.4
Reward	8182	18.2
Quality	6607	15.9

Continued

Variety	C.I.No.	Average yield (Bu. per acre)
Wheat (Durums)		
Mindum	5296	25.5
Nodak	6519	22.1
Mondak	7287	21.5
Kubanka	1440	20.8
Kubanka No. 132	8333	20.8
Kubanka No. 8 x Pentad	8386	20.7
Monad	3320	20.5
Oats		
Green Russian Sel.N.Dak. 20014	2343	69.1
Victory	560	66.4
Green Russian Sel.N.Dak. 22006	2345	66.0
Markton	2053	65.0
Green Russian Sel.N.Dak. 22005	2344	64.3
Iogold	2329	63.0
Golden Rain	493	62.6
Swedish Select	134	60.3
Lincoln	738	59.5
Gopher	2027	59.1
Sixty-Day	165	52.9
Liberty Hull-less	845	34.9
Barley		
Trebi	936	49.1
Horn	926	44.3
Alpha	959	39.3
Odessa	182	38.5
Featherston	1120	36.2
Hannchen	531	33.8
Charlottetown	---	32.8
Orel	351	27.1
Meloy	1176	24.7

Visitors at the Station during the latter part of August were Dr. H. V. Harlan, Miss Mary Martini, Dr. E. G. Boerner, and A. C. Dillman of Washington, D. C., and R. H. Black, in charge of Grain Cleaning Investigations, U. S. D. A., Minneapolis, Minn.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (September 1)

The commercial rice fields are all nearly fully headed at present and look much better than they did two weeks ago. The rice appears to be from seven to 10 days earlier than usual, however. Unfavorable weather may yet delay the maturity of the crop.

A number of the early maturing varieties in the nursery and plots at the Station are mature. The midseason varieties are fully headed and the late-maturing varieties are starting to head.

The weather during August has been very favorable for pollination and fertilization and there should not be many blanks this fall.

The maximum temperature recorded was 105 degrees F. on August 10 and the minimum, 52 degrees F. on August 30 and 31. The average maximum temperature was 94.3 degrees F. and the average minimum temperature 56.5 degrees F. The mean temperature was 75.4 degrees F. This is the highest mean since 1923.

On August 24, W. B. Camp, Superintendent of the U. S. Cotton Station at Shafter, Calif., and C. F. Dunshee of the Division of Irrigation Investigations, University Farm, Davis, were Station visitors.

On August 30, F. D. Richey, in charge of Corn Investigations, and Dr. F. N. Briggs, in charge of cooperative cereal smut investigations at Berkeley, Calif., visited the Station.

University Farm, Davis (Cereal Agronomy, V. H. Florell) (September 1)

Fulghum oats, of which Kanota is the best known strain in California, is the most valuable variety which has been introduced for some time. It has been found satisfactory to the farmer, and has given renewed impetus to the rolled-oats industry in California. However, it is susceptible to improvement in such characters as resistance to lodging and shattering, and the usual rust diseases.

In 1927, a large number of Fulghum selections from the southern States were sent in for trial from the Washington office. They were first grown in head rows, and this year more than 100 were grown in replicated 15-foot rows. A number of these show marked resistance to lodging as compared with Kanota and Fulghum (C. I. No. 708).

The strains showing resistance to lodging of five and less are listed below. The lodging was estimated on a scale of 1 to 10 (10 to 100 per cent).

a/Fulghum selections grown in triplicated triple 15-foot rows in 1928

Sel.No.	Source	b/Lodging	Bu. per Acre
F 9	Auburn, Ala.	5	92.5
F 11	Do	3	70.5
F 42	Do	2	79.0
F 47	Do	5	67.5
F 50	Do	5	77.1
F 58	Tuskegee, Ala.	5	c/65.0
F 59	Do	5	86.4
F 73	Athens, Ga.	5	71.1
F107	Starkville, Miss.	3	68.5
F111	Do	5	74.5
F119	Do	2	82.1
F122	Do	5	c/48.2
F124	West Point, Miss.	2	68.6
F126	Do	1	49.3
F129	Do	5	55.3
F131	Clemson, S. C.	5	63.7
Appeler No. 4	Do	5	84.7
Appeler No. 7	Do	4	63.3
F136	Corvallis, Oreg.	4	74.9
F140	Do	4	c/74.5
d/Sunrise average of all (32) check rows		7.1	63.2
f/Fulghum No. 708 av. " (28) " "		8.1	64.6
e/Kanota No. 839 " of five rows		7.0	64.8
Fulghum No. 708 av. of all (14) check rows		7.0	73.5

a - 102 selections in set
b - Average of notes on two replications.
c - Average of notes on two rows.
d - Check variety in comparative varietal experiment in nursery.
e - Check variety in comparative hybrid oat nursery.
f - From varietal experiment in nursery.

Since 1924 a number of oat hybrids have been grown. After selecting from the best rows of these for several seasons, more than 40 strains were further tested in replicated rows in 1928. Some of these selections appeared to be the most promising of any of the oats grown. A number of selections from hybrid family 1047 b 2 (Dwarf Culberson x Fulghum) were entirely free from lodging as well as from rust. The highest yield recorded was 122.3 bushels per acre with several approaching this figure. The yield of the Fulghum check variety was 73.5. A list of the highest yielding strains is given below.

a/Oat hybrids grown in triplicated triple 15-foot rows in 1928

Cross No.	Date First Head	b/Lodging	b/Rust		Average (Bu. per acre
			Stem	Leaf	
1047 b 1					
H 10	4-20	3	T	0	89.6
H 22	4-22	4	2	T	91.8
1047 b 2					
H 34	4-18	0	T	0	107.0
H 35	4-18	0	T	0	92.5
H 36	4-18	0	1	0	122.1
H 37	4-21	0	T	0	100.2
H 38	4-21	0	T	0	90.8
H 39	4-21	0	T	0	122.3
H 40	4-21	0	1	2	118.2
H 41	4-21	0	2	2	86.9
H 42	4-21	0	T	0	106.7
H 44	4-20	0	2	T	99.8
H 52	4-20	4	T	0	89.3
Fulghum C.I.No. 708 (check)	4-10	7	1.6	T	73.5
Av. of 14 check rows.					

a/44 hybrid selections in set.
b/Average of notes on two replications.

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs) [September 6]

F. D. Richey, agronomist in charge of corn investigations, arrived on August 24 to study the possibility of corn growing in California. On Monday, August 27, a trip was made through the San Joaquin Valley to Stockton. Tuesday was spent with the Farm Advisor studying corn growing on the peat lands near Stockton, where some 25,000 acres of corn are grown within a comparatively small area. The next day was spent at the University Farm of California Agricultural Experiment Station, at Davis. The trip was continued north through the Sacramento Valley to Biggs, where we visited the Biggs Rice Field Station.

Stops were made at the U. S. Plant Introduction Garden near Chico, and at the Eddy Tree Breeding Station, near Placerville. We then went south to Napa and spent a day in the cooler and more humid region, from Napa toward the coast to Healdsburg and Santa Rosa.

Considerable corn smut (Ustilago zea) was present in nearly all fields. From 20 to 46 per cent of the plants showed this disease. Four per cent of head smut (Sorosporium reilianum) of corn was found in one field near Stockton.

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer (August 31)

During the period from August 6 to 21, inclusive, the writer joined in a field trip through Nebraska, South Dakota, Iowa, Illinois, Wisconsin, Minnesota, and North Dakota with Leaders from other States and representatives from our Washington, D. C., Office. The purpose of the trip was to inspect places where common barberries have been found and where they may be found, and to afford an opportunity for an exchange of opinions on methods, kinds, and time of various surveys. The present barberry-distribution situation in the States west of the Mississippi River probably simulates closely the situation as it obtained in Ohio 50 to 75 years ago. It seems, indeed, fortunate that barberry eradication started when it did in the region where production of spring wheat is of such great importance, instead of 40 or 50 years later when sources of rust spread and bush spread would have had opportunity to increase many fold.

On August 23 and 24 a search was made in several places in northern Michigan with the hope of finding favorable sites for the location of experimental barberry seed and seedling plots. It is planned to carry on several experiments in Michigan and Ohio during the next few years to learn something about the time of barberry seed maturity, factors affecting seed germination, death rate of seedlings and means of killing seedlings. Some of these experiments are now under way.

First survey in Ashtabula County is progressing very slowly. Sixteen per cent of the total area of the County was covered in August by first survey, but almost all of our force was working there during the entire month. There seems to be no way of increasing speed of progress without risk of sacrificing efficiency. It now seems evident that about 25 per cent of Ashtabula County will remain unsurveyed until next spring or summer.

A barberry-eradication demonstration was held in connection with the exhibits of the Ohio Department of Agriculture at the Ohio State Fair, August 27 to September 1, 1928.

INDIANA

Purdue University College of Agriculture, LaFayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell (September 1)

During the months of June, July, and August the Wisconsin barberry forces have found and destroyed over 37,000 barberries. Of these about 14,000 were seedlings. About 110,000 pounds of common salt were used in killing these bushes. The greater portion of the bushes has been growing in the Black Earth area of escaped barberries in Dane County, where a squad of six men has been stationed during the season.

The greater portion of the grain crop ripened before rust had developed to a damaging severity. With the exception of a few cases in the northern part of the State, severe rust has been confined to very local spreads about barberries. In the same localities grain away from barberry bushes matured with no rust damage. A more convincing demonstration of the source of stem-rust inoculum in this State could not be desired than has been furnished this year by the finding of these many local rust epidemics.

Crown rust of oats has developed in epidemic form in souther Wisconsin, however. Large numbers of the alternate host, buckthorn, are growing in woodlots and fence rows. They were the very evident centers of the early crown rust spreads. Substantial losses resulted from crown rust in much of this area.

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills (August 24)

One location of escaped bushes was found in Ogle County last week as a result of a tip from a farmer who had seen the barberry demonstration at the Jo Daviess County Fair last year. Another location in Stephenson County was reported by a farmer who had learned to identify barberry at the 1927 Minnesota State Fair. Findings of this nature show the wide range over which County and State fair publicity is effective.

County fairs at Warren, Pecatonica, and Oregon, and local farmers' picnics at Freeport and at the Barrett Grange will have good demonstrations this year. Mr. Corbin, who is in charge of publicity, has improvised a new and effective demonstration.

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L. W. Melander (September 7)

The second survey of Carver and Hennepin counties progressed slowly in August. In Carver County the survey of the district along the Minnesota River was completed. In Hennepin the territory bordering on Lake Minnetonka was nearly completed. This is a very difficult territory to survey because of the abundant growth of shrubbery, both wild and planted. In the resurvey of Houston County many bushes are being found. In the southern part of the County there is an area of escaped common barberry which extends over the Minnesota line into Iowa. Sometime in the future it will be necessary to make an interstate map of this area.

The threshing of small grains is about completed. The yields of winter and spring wheat are above expectations in some districts. There was hardly any noticeable damage from stem rust in any section of Minnesota this year.

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger (September 5)

Losses from stem rust undoubtedly will reach a new minimum in South Dakota this year, according to preliminary estimates. Some damage occurred on exceptionally late wheat, and in a few isolated areas where the crops were about on time. In two of these areas common barberries were found this year which undoubtedly were responsible for the losses. The other areas will be investigated as soon as time and funds permit.

One of the best examples of the spread of stem rust from barberries was found in Grant County. This county is situated in the spring-wheat district and where a few barberries may be responsible for considerable loss. While only about one-half of this county has been covered so far this year, 71 barberries have been found on 12 different properties. Most of these were severely infected with the spring stage of stem rust. Losses in fields near some of these bushes are estimated as high as 25 per cent, while there was a loss of about five per cent in the entire county. This is the heaviest loss in the State this year. Grant County is the only county in which stem rust appeared in noticeable severity on oats and durum wheat.

Another example of the spread of stem rust was noted in Hutchinson County. Here the damage was not so great because of the earliness of the crops. However, the only place where rust loss occurred was in fields near barberry bushes.

A total of 1,128 barberry bushes, large and small, has been found on 44 different properties. The work has progressed slowly due to the intensive type of survey. However, this kind of work appears to be necessary in order to find all of the escaped bushes.

Several plantings of barberries were found this year that undoubtedly would have been missed if all of the timber had not been covered thoroughly. People in general, especially the business men in the smaller towns and cities, have been giving excellent cooperation.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren (August 31)

A very thorough second survey was made of Sheridan County in August. Two men with an automobile made this survey, finding nine new properties on which 12 very large barberry bushes were growing, the largest of which was estimated to be 14 feet high and more than 50 years old.

A resurvey also was made of this county, but no sprouting bushes were found, indicating that a thorough job of eradication had been done on the first survey.

There was not a great deal of rust in Wyoming this year. However, in some of the southern counties the late wheat was badly rusted. Very little oat rust could be found. It is planned to do more work in Wyoming next season.

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren (August 31)

During the month of August five men worked very hard in Weld County, completing all of the scouting with the exception of one strip of river territory.

Eight new properties were found, containing 23 large bushes, and six escaped bushes were found on old properties. One very large bush was found on a farm west of Ft. Lupton which was 12 feet high and had thousands of seeds.

The Big Thompson River area in Larimer County, which was scouted last year, also was gone over by the intensive method, and 26 small barberries and 6,225 seedlings were found.

From the standpoint of stem rust this year, only a trace of loss can be reported. Winter wheat escaped rust almost entirely and spring wheat did not have sufficient to cause any damage. Oats and barley also escaped damage.

The publicity and educational work is getting under way for the coming season. All of the superintendents of schools have been written to find out how much material will be needed for teaching this year. The return cards are now coming in and the material is being sent out. The Colorado Smith-Hughes teachers in agriculture are teaching 100 per cent on barberry eradication and stem rust work.

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PLANT INDUSTRY

C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 23

September 20, 1928
Personnel (Sept. 11-20) and Field Station (Sept. 1-15) Issue

PERSONNEL ITEMS

Dr. C. R. Ball, principal agronomist in charge, left Washington on September 18 to go to Bloomington, Ill., and La Fayette, Ind., to inspect the cooperative corn-disease experiments conducted by Dr. J. R. Holbert and Dr. G. N. Hoffer, respectively. On September 20 Dr. Ball is scheduled to address the Rotary Clubs of Bloomington and near-by points on the subject of the work of the Bureau of Plant Industry of the Department of Agriculture in the development of the agricultural resources of the United States.

On September 24 Dr. Ball and F. D. Richey, senior agronomist in charge of corn investigations, will be in Toledo, Ohio, to attend the joint meeting of the members of the European Corn Borer Committees, representing the American Association of Economic Entomologists, the American Society of Agricultural Engineers, the American Farm Economics Association, and the American Society of Agronomy, which will be held during the first four days of the week of September 24. An inspection will be made of the corn-borer area in Ohio, Michigan, and Canada to determine conditions and to make recommendations to the conference called by the International Corn Borer Organization on September 27-28.

Gordon C. Curran, associate pathologist in barberry investigations, left Washington on September 11 with one of the motion-picture photographers of the Department for Pennsylvania where he assisted in photographing areas of escaped barberries near Carlisle and State College. Photographs also were obtained of several ornamental plantings of common barberry and of hedges of Japanese barberry. Mr. Curran returned to Washington on September 14.

Dr. H. V. Harlan, principal agronomist in charge of barley investigations, returned to Washington on September 12, after an extended western trip in the interests of barley investigations.

Dr. A. G. Johnson, principal pathologist in charge of cereal-disease investigations, left Washington on September 17 for points in Indiana, Illinois, Wisconsin, Minnesota, North Dakota, South Dakota, Nebraska, Kansas, and Arkansas to inspect cooperative cereal-disease experiments and to confer with Department employees and officials of agricultural experiment stations.

Miss M. L. Martini, assistant botanist in barley investigations, returned to Washington on September 15.

Reed Walker was appointed junior chemist, effective September 20, to fill the position made vacant by the resignation of H. Millard Joslin on May 31. Mr. Walker will be located in the nitrogen laboratory of the Bureau of Chemistry and Soils. His duties will be to determine the crude-protein content of wheat samples from nursery experiments and the inheritance studies of the Western Wheat Investigations project in connection with breeding for disease resistance, yield, and quality.

VISITORS

Wayne E. Leer, State Leader of barberry eradication in Indiana, was an Office visitor on September 20 while on a vacation trip in the East.

MANUSCRIPTS AND PUBLICATIONS

44 A manuscript entitled "Registration of Varieties and Strains of Oats, III," by T. R. Stanton, H. H. Love, and E. F. Gaines, was approved on September 19 for publication in the Journal of the American Society of Agronomy.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H.F.Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (September 14)

Moisture conditions are no better than they were two weeks ago. There were three showers in the first part of September, but on dry soil and dry atmosphere the effects did not last long.

The Annual Field Day, September 8, was very well attended, there being about 1,500 visitors. The principal speakers were Mr. John Fields and President Bennett of the Oklahoma A. & M. College. There were a number of scientists from the A. & M. College and from surrounding States. County agents and farmers came from as far as 100 miles.

H. N. Vinall, of the Office of Forage Crops, visited the Station on September 6.

Plots of grain sorghums and broomcorn are being harvested as they become ripe.

Maximum temperature for first half of September, 99 degrees on the 12th; minimum, 51 degrees on the 3d. Precipitation 0.81 of an inch in three showers.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

COLORADO

Akron Field Station, Akron (J. F. Brandon, Office of Dry Land Agriculture) [September 11]

The following yields of winter wheat were obtained in the varietal experiments at the Akron Field Station, in 1928. These yields are the largest obtained since 1912. The yields are averages of four plots, two on fallow and two on corn land.

Variety	C.I.No.	Yield (Bu. per acre)
Kharkof (Hays No. 2)	6686	40.4
Kanred Sel. 0166	----	39.8
Nebraska No. 60	6250	39.1
Nebraska No. 6	6249	39.1
Oro	8220	38.2
Kanred (Nebb long beak)	----	37.8
Kanred	5146	36.6
Kharkof	1583	36.2
Early Kanred (1499 Kd)	----	36.1
Turkey Sel. 3055-159	----	36.0

(Continued)

Variety	C.I.No.	Yield (Bu. per acre)
Superhard	8054	35.9
Regal	8364	35.0
Tenmarq	6936	34.9
Blackhull	6521	34.5
Pesterboden Sel. 1564-2-11	----	34.3
Newturk	6935	34.1
Kanmarq	6937	33.6
Marquis x Kanred (Kans. 441)	----	31.9
P-1068 x Preston (Kans. 449)	----	31.3
Minturki	6155	27.5
Rosen rye	----	27.2
Hussar	4843	26.5
Alton	1438	23.8

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague) [September 11]

The following yields of winter-wheat varieties were obtained in the varietal experiments at the North Platte Substation, in 1928

Variety	C.I.No.	Yield (Bu. per acre)
Oro	8220	45.5
Kanred	5146	45.2
Marquis x Kanred (449)	----	45.0
Kharkof	1442	44.5
Turkey (local)	----	44.5
Newturk	6935	43.2
Montana No. 36	5549	43.2
Tenmarq	6936	43.2
Nebraska No. 60	6250	42.8
Nebraska No. 30	7358	42.0
Nebraska No. 6	6249	41.8
Sherman	4430	41.0
Beloglina	1543	40.9
Karmont	6700	40.7
Blackhull	6251	40.7
Awnless Sel. Nebr. No. 28	----	40.4
Minturki	6155	40.1
Marquis x Kanred (441)	----	39.2
Kanmarq	6937	39.2
Regal	7364	38.8
Superhard	8054	37.1
Fulhard	8257	37.0
Hussar	4843	36.2
Nebraska No. 28	5147	27.7

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (September 14)

During the past week threshing has been interrupted several times by misty weather. The precipitation has been but slight, only enough to make the grain too wet to thresh. The cereal varieties in plots were threshed some time ago. The spring nursery remains to be threshed.

Corn varieties have not yet been harvested. Silage corn is being harvested today. With another week of favorable weather there will be considerable ripe corn in this vicinity.

F. D. Richey, senior agronomist in charge of corn investigations, visited the Substation on September 11.

The following table presents the yields of oat varieties grown in quadruplicated plots on the Substation in 1928.

Acre yields of oat varieties and of Yaroslav emmer grown in quadruplicated 56th-acre plots at the Dickinson Substation in 1928

Variety	C.I.No.	Acre yield (Bushels)
Oats		
Green Russian[a/]	2343	88.9
Anthony	2143	88.1
Victory	560	87.4
Banner selection	1997	87.3
Big Four	658	85.6
White Russian	551	85.5
Iogren	2024	84.1
Green Russian[a/]	2344	82.3
Lincoln	738	82.2
Richland	787	81.1
Markton	2053	81.1
Kherson	459	79.8
Green Russian[a/]	2345	79.1
Gopher	2027	78.9
Swedish Select	134	78.3
Iogold	2329	76.9
Golden Rain	493	76.0
Iowar	847	70.9
Liberty Hull-less	545	48.9
Emmer		
Yaroslav	1526	75.4

a/ Selections from the State Agricultural Experiment Station, Fargo, N. Dak.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus)

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (Joe L. Sutherland) (September 15)

The precipitation for the period from September 1 to 15 was 0.41 of an inch. The 19-year average for the month of September is 1.70 inches. Maximum temperature for the first half of September, 86 degrees F.; minimum, 34 degrees.

With generally favorable weather prevailing, field work has progressed rapidly. Harvesting of all plots and nursery rows is finished with the exception of the later dates in the rate-and-date experiment with spring grains. Yields of spring wheat were not so high as expected before harvest, while those of oats and barley were above average.

A large winter nursery, winter-wheat variety plots, and five dates on the rate-and-date-experiment have been sown. Good stands have been obtained on all fall plantings, as soil and moisture conditions were favorable. Some yellowing of the leaves has been noticed on the July 16 date of seeding winter wheat.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills [September 15]

All the squads of barberry scouts in Illinois have been moved into Jo Daviess and Stephenson counties and are continuing the intensive survey with the intention of completing those two counties this season.

Not many bushes are being found and the work is necessarily progressing slowly, but it is felt that very thorough methods are being used and that the results will be satisfactory.

The men who are to continue work at the University this year are resigning now. This will leave 10 men in the field to carry on field operations as late in the season as the weather will permit.

During the last few weeks L. H. Corbin, in charge of publicity in Illinois, has designed an attractive barberry demonstration which has been on display at seven county and local fairs in Winnebago, Jo Daviess, Ogle, and Stephenson counties. Mr. Corbin accompanies the demonstration and reports that there is always an interested group of people about the tent. He feels that demonstrations of this kind are filling a more important need each year. At this stage of the campaign almost everyone has heard of common barberry, and most people know something of its history. The big problem now is identification. A potted bush as the center of attraction with someone to point out its characteristics and to answer questions causes much interest and has great educational value. Fifteen locations have been reported at the fairs this year.

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L.W.Melander

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G.C.Mayoue [September 12]

Since August 4 intensive survey has been completed in Adams and Kidder counties where the field men made good progress because of the excellent cooperation which they received. Pierce County will be completed in this survey within two or three weeks. The people of this county also have cooperated splendidly. Subsequent surveys have been conducted this seasin in Grand Forks and Traill counties.

Several interesting rust spreads have been observed this season. The most outstanding was one near Reynolds in Grand Forks County where bushes were located on July 24. Stem rust spreads this season have been entirely local and thereby indicated possible locations of remaining bushes. Records of these spreads have been made in order that those places may be surveyed as soon as possible in the future.

Demonstrations have been conducted since September 1 at fairs in counties west of the Missouri River. People visiting the demonstrations evidenced a great deal of interest in the campaign. Demonstrations also will be made at other county fairs and corn shows in September and October.

In addition to the regular survey the Leader and agents are gathering data regarding the yields and grades of this season's grain crop in order to compute the 1928 stem-rust loss, which probably will be less than one per cent for the entire State.

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry; U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 24

September 30, 1923
Personnel (Sept. 21-30) and Project Issue

PERSONNEL ITEMS

E. R. Ausemus, junior agronomist in charge of cooperative wheat investigations at the Northern Great Plains Field Station, Mandan, N. Dak., will leave Mandan on October 1 for Manhattan, Kans., to consult with officials of the agricultural experiment station and inspect the cooperative cereal-breeding experiments. Mr. Ausemus also will go to Lincoln, Nebr., and St. Paul, Minn., for the same purpose. He then will proceed to Washington, D. C., where he will remain for six months to assist the senior agronomist in charge of western wheat investigations in assembling data and writing reports on the work of the past year and in selecting seed for future experiments and planning future work at Mandan, N. Dak.

Dr. C. R. Ball, principal agronomist in charge, returned to the Office on September 29 after an absence of 10 days in the corn-borer region where he attended the joint meetings of the members of the European Corn Borer Committees.

James F. Brewer, of the Pathological Laboratory, was authorized to go to Bloomington, Ill., on September 22 to take photographs in connection with the cooperative corn-disease experiments.

Dr. H. B. Humphrey, principal pathologist in charge of cereal-rust investigations, returned on September 11 after an absence of over three months in the western States in the interests of cereal-rust investigations.

L. D. Hutton, associate pathologist in charge of barberry eradication, returned to Washington on September 21 after an absence of seven weeks in the barberry-eradication area.

Dr. H. H. Love, professor of plant breeding at Cornell University, and collaborator with this Office in cooperative cereal-breeding experiments, writes on September 27 that the seeding of all varieties and strains of wheat has been completed. The threshing of oats from the different experiment plots is nearing completion. As a result, data from the various experiments with oats soon will be available for study and digest.

The appointment of William W. Mackie, collaborator without compensation with this Office in cooperative cereal-disease investigations at Berkeley, Calif., was terminated August 16.

Prof. L. E. Melchers, head of the department of botany and plant pathology of the Kansas Agricultural College, who is on leave of absence in Egypt making an agricultural survey for the Egyptian Ministry of Agriculture, states in a letter dated August 23 addressed to H. H. McKinney that he expects to remain in Egypt until about April, 1929. Prof. Melchers has found streak in sugar cane widely distributed in Egypt. Recently he has found what seems to be streak on maize though not widely distributed. This of course is interesting in the light of the possible connection between streak and the yellow mosaic symptoms on the small grain crops.

MANUSCRIPTS AND PUBLICATIONS

Galley proof of the article entitled "The Influence of Oxygen and Carbon Dioxide on the Growth of Ophiobolus graminis in Pure Culture," by Hurley Fellows, for publication in the Journal of Agricultural Research, was read on September 21.

Galley proof of the article entitled "The Prevalence of Mixtures in Marquis Wheat Grown in Central Montana in 1926," by Karl S. Quisenberry, J. Allen Clark, and B. B. Bayles, for publication in the Journal of the American Society of Agronomy, was read September 26.

Galley proof of the article entitled "Further Studies in Quantitative Virological Methods," by H. H. McKinney, for publication in Science, was read on September 29.

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture,
(NOT FOR PUBLICATION)

Vol. 20 No. 25

October 10, 1928
Personnel (Oct. 1-10) and Field Station (Sept. 16-30) Issue

PERSONNEL ITEMS

B. B. Bayles, assistant agronomist in charge of the cooperative cereal experiments that are being conducted at the Judith Basin Substation, Moccasin, Mont., has been granted leave of absence without pay to enable him to engage in graduate study at the University of Wisconsin, beginning with the fall semester and ending with the school year in June, 1929. Mr. Bayles' course of study will include botany, plant physiology, and plant pathology.

Joe L. Sutherland has been appointed agent, effective October 1, to have charge of the cooperative cereal experiments at Moccasin in Mr. Bayles' absence.

C. E. Chambliss, associate agronomist in charge of rice investigations, returned to Washington on October 8 from an extended trip in Louisiana, Texas, Arkansas, Missouri, Illinois, Pennsylvania, and Georgia, in the interests of rice investigations.

G. C. Curran, formerly associate pathologist in barberry eradication, resigned his position on October 1 to take up study at the Graduate School of Business Administration, Harvard University, Cambridge, Mass.

A. C. Dillman, associate agronomist in charge of flax investigations, returned to Washington on October 1 from an extended trip in the flax-growing areas of the United States.

J. M. Hammerly, senior scientific aid in corn investigations, spent the first week of October at Florence, S. C., harvesting cooperative experimental plots of corn.

F. D. Richey, senior agronomist in charge of corn investigations, returned to Washington on October 1 after traveling for seven weeks in various parts of the United States in the interests of corn investigations.

The appointment of Glenn S. Smith, who assisted in the cooperative cereal experiments at the Dickinson Substation and at the Langdon Substation in North Dakota during the past summer, was terminated on September 19. Mr. Smith returned to his college studies.

Edgar C. Tullis was appointed agent, effective September 24, to assist in the study of rice diseases in cooperation with the Arkansas Agricultural Experiment Station, Fayetteville, Ark.

VISITORS

D. G. Fletcher, Secretary of The Conference for the Prevention of Grain Rust, Minneapolis, Minn., was an Office visitor on October 9 and 10.

MANUSCRIPTS AND PUBLICATIONS

45 A manuscript entitled "Inheritance in Nodak and Kahla Durum Wheat Crosses for Rust Resistance, Yield, and Quality at Dickinson, North Dakota," by J. Allen Clark and Ralph W. Smith, was approved on October 1 for publication in the Journal of the American Society of Agronomy.

46 A manuscript entitled "Wild Oats," by H. V. Harlan, was approved on October 1 for publication in The Journal of Heredity.

47 A manuscript entitled "Effects of Dehulling Seed and of Date of Seeding on Germination and Smut Infection in Oats," by B. B. Bayles and F. A. Coffman, was approved on October 6 for publication in the Journal of the American Society of Agronomy.

The following 10 manuscripts were submitted early in October for publication in the 1928 Yearbook of the Department of Agriculture:

48 New Flax Varieties Resistant to Wilt, by A. C. Dillman.

49 Breeding Corn for Increased Resistance to Frost Injury in the Fall, by J. R. Holbert.

50 Smut Removes Sugar from Cornstalks, by A. M. Hurd-Karrer.

51 Local Rust Epidemics Betray Barberries, by L. D. Hutton.

52 New Seed Treatments for the Control of Seed-Borne Diseases of Cereals, by R. W. Leukel.

53 Atlas Sorgo, a New, Promising Variety, by J. H. Parker.

54 Broomcorn Harvesting and Quality of Brush, by J. B. Sieglinger.

55 Oat Varieties Resistant to Smut, by T. R. Stanton, F. A. Coffman, and V. F. Tapke.

56 Time of Seeding Winter Wheat in the Central Great Plains, by A. F. Swanson.

57 Potash Relations to Premature Ripening in Corn, by J. F. Trost.

Galley proof of article entitled "Daily Growth and Oil Content of Flaxseed," by A. C. Dillman, for publication in the Journal of Agricultural Research, was read on October 1.

The article entitled "Inheritance of Resistance to Puccinia graminis avenae," by S. M. Dietz, appears in the Journal of Agricultural Research 37 (1): 1-23, figs. 1-5. July 1, 1928. (Received October 10.) (Cooperative investigations between the Office of Cereal Crops and Diseases and the Iowa Agricultural Experiment Station.)

October 10, 1928

NOTICE TO STAFF MEMBERS:

The British Empire Vegetation Committee, Royal Botanic Gardens, Kew, England, of which Dr. T. F. Chipp is Secretary, desires to obtain reprints of papers which deal in any way with the vegetation of any part of the British Empire. While their work is concerned especially with general ecology, papers on "floristic and taxonomic botany; on plant physiology and plant anatomy, where they have a direct bearing on ecology; on climate, geology, and soils; and certain works (excluding the more specialized technical papers and reports) on forestry and agriculture, including annual reports and bulletins when these are clearly of ecological value," are desired. "The general criterion for inclusion is interest to the student of vegetation and ecology."

In the case of papers published in 1927 or 1928, and thereafter, brief abstracts also are desired. These should be similar to those appearing in Biological Abstracts, and will be published by the Committee in the Journal of Ecology. The Committee prefers that the abstracts be furnished at the time proof is read in order that they may appear in the Journal of Ecology not too long after the paper is published.

Wm. A. Taylor,
Chief of Bureau.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L.J.Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L.S.Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. F. Hains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (October 1)

The weather of the last half of September remained dry and hot. Rain must come before it will be safe to sow wheat. Sorghums are drying ripe, and the seed will be small due to shrinkage.

From September 14 to 19 the writer took a trip to Tucumcari, New Mexico, through northeastern New Mexico, and Dalhart, Texas. Conditions varied greatly throughout the district. At Tucumcari the sorghums were fair, or close to average; at Clayton, N. Mex., and Dalhart, Tex., the sorghums were in good condition or much above average. At Capulin, N. Mex., a killing frost had occurred. Over the entire region traveled a rain would be welcome at any time soon.

Messrs. M. A. McCall and J. H. Martin of the Cereal Office visited this Station on September 26, 27, and 28.

Harvesting plots and seed heads are the chief work at present.

Maximum temperature for the last half of September 98 degrees on the 30th; minimum 43 degrees on the 26th; precipitation 0.0. The total precipitation for September was 0.81 of an inch.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (October 1)

The writer has just returned from a trip to southern Kansas. A leaf-rust nursery, consisting of 492 five-foot rows of winter wheat, was sown at Harper. No rain has fallen in that part of Kansas for several weeks and the soil is extremely dry. Sowing of winter wheat has been delayed for at least two weeks by the drought but many farmers are now sowing in the dust. Unless rain comes soon, it seems that much of the wheat will either fail to come up entirely or will make so little growth that it will go into the winter in very poor condition.

The late summer drought has prevented the usual growth of volunteer wheat in the southern half of the State and consequently there is no fall infection of leaf rust in that area to date. This is in direct contrast to conditions at the same time for the past three years, when much volunteer and early sown wheat was heavily infected with leaf rust. The only fall infection of leaf rust found in Kansas to date was a moderate amount in Cloud and Republic counties on September 3, and a small amount at Manhattan on September 20.

The winter-wheat leaf-rust nursery was sown at Manhattan on September 25-27. Approximately 1,200 selections were sown, of which about 300 were varieties and selections while the remainder were hybrids. It is planned to study many of these hybrids in the greenhouse as well as in the field.

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague)

SOUTH DAKOTA

Belle Fourche Field Station, Newell, Beyer Aune, Superintendent (September 15)

A. C. Dillman, associate agronomist in charge of flax investigations, was at the Belle Fourche Station in September. He reported the crop growing season as generally favorable in the northwestern counties of South Dakota. Good yields of small grains and flax have been obtained. A dry spring was followed by abundant rains in June and July, and although the total seasonal rainfall was not greatly above the average, it was well distributed for the benefit of crops. The following table presents the monthly precipitation at the Belle Fourche Field Station:

January	0.16	June	3.38
February	.07	July	4.89
March	.79	August	1.44
April	.35	Sept.1-15	1.33
May	1.81	Total	14.22

The yield of flax varieties grown on irrigable land, but not irrigated because of sufficient rainfall, was as follows:

Yield of flax varieties grown in triplicated 50th-acre plots at the Belle Fourche Field Station, Newell, S. Dak., in 1928[a/]

(Data furnished by courtesy of Beyer Aune, Supt.)

Variety	C.I. No.	Date Seeded	Date Emerged	Date of-- First bloom	Date of-- Ripening	Height (In.)	Weight per bu.	Yield Bu. per acre
Bison	---	May 22	May 28	July 12	Aug. 17	25	56	25.3[b/]
Linota	244	Do	Do	Do	Do	26	57	24.4
Primost	12	Do	Do	Do	Do	25	56	23.2
Redwing	180	Do	Do	Do	Do	21	57	22.6
Winona	179	Do	Do	Do	Do	25	56	22.3
Rio(L.79)	280	Do	Do	July 21	Aug. 22	26	48	22.3

a/ The flax varieties were grown on land which was in alfalfa used for hog pasture for three years, 1924 to 1926, inclusive, and cropped to corn in 1927.

b/ Average of four plots.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (October 2)

The month of September has been unusually dry. The rainfall was only 0,50 of an inch. This was distributed in several light showers, the heaviest of which was only 0.13 of an inch. There were several misty days wet enough to prevent threshing. The maximum temperature was 92 degrees on the 7th and the minimum, 14 degrees on the 27th. The first general killing frost occurred on the 23d with a minimum of 26 degrees. This is 10 days later than the average date.

The early corn varieties were fairly well matured before the frost, although the later ones were still green as usual when the first frost occurred.

The threshing of the spring nursery is in progress.

Yields of barley and flax varieties grown in triplicated 56th-acre plots are presented in the following tables.

Yields of barley varieties grown in triplicated 56th-acre plots on the Dickinson Substation in 1928.

Variety	C.I.No.	Yield (Bu. per acre)
Steigum	907	38.2
Scholey	962	33.7
Gold	1145	33.7
Hannchen	531	32.1
Hanna	203	31.5
Charlottetown No. 80	2732	29.2
Svanhals	187	28.4
Odessa	182	27.6
White Smyrna	658	26.7
Manchuria	244	26.6
Glabron	---	26.1
Duckbill	1916	25.7
Velvet	---	24.6
Lion	923	23.3
Nepal (Hull-less)	262	23.2
White Gatami	920	19.5
Wing Pedigree	1177	17.0

Yields of flax varieties grown in triplicated 56th-acre plots on the Dickinson Substation in 1928

Variety	C.I.No.	Yield (Bu. per acre)
Rio (Long 79)	280	15.8
Linota	244	14.5
Bison	389	14.1 Only
N.D.R. 114	13	13.8 (2 plots)
Reserve	19	13.2
Buda (N.D.R. 119)	326	13.0
Stark	185	12.6
N. D. R. 52	8	12.2
N. D. 40,013	241	12.0
Hybrid 19 x 112	383	11.9 (Only 1 plot)
Chippewa	178	11.0
Redwing	320	10.9
Winona	179	10.5

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (September 26)

Acre yields of flax varieties grown in triplicated 50th-acre plots at Mandan, N. Dak., in 1928

Variety[a]	C.I.No.	Yield (Bu. per acre) Series 1	2	3	Average
N. D. R. 114	13	4.5	6.7	5.5	5.6
Winona	179	7.3	9.2	7.5	8.0
Sel. 179-9	---	8.5	9.7	9.0	9.1
Redwing	320	11.5	12.7	10.3	11.5
N. D. No. 40013	241	12.5	12.7	10.3	11.8
Linota	244	12.0	12.2	10.5	11.6
N. D. R. 52	275	10.5	10.5	9.8	10.3
Slope	274	12.5	11.7	11.0	11.8
Sib. 206	---	13.0	11.7	11.3	12.0
Buda (N.D.R. 119)	326	11.7	11.3	10.0	11.0
Bison	389	10.7	10.3	8.5	9.8
Rio (L. 79)	280	13.7	11.2	10.3	11.8
Hybrid 19 x 169	385	11.5	9.0	----	10.3[b]

[a] Listed in order of seeding.

[b] Average of two plots only.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (October 2)

The month of September has been ideal for threshing. All threshing has been completed on the Cereal Project at the Station. Reports are that it will take a month to complete the threshing on the farms.

The uniform winter-hardiness nursery was sown on September 11 and had emerged with good stands on September 19. Stand counts were taken September 24.

Only 0.89 of an inch of precipitation was recorded for the month and this fell during the first 15 days. The maximum temperature for the entire month was 90 degrees on September 6, the minimum 21 degrees on the 24th. The first killing frost of the season was recorded on September 22, the temperature being 28 degrees.

Langdon Substation, Langdon (J. A. Clark)

A one thousand rod-row nursery was grown at the Langdon Substation from seed prepared in this Office. The seeding was done by Supt. Victor Sturlaugson and the harvesting and threshing by Glenn S. Smith. The following table presents the average yields of 62 durun and 5 common varieties and hybrid selections of wheat grown in three row blocks replicated three times, from which the center row was harvested for yield. In addition there were 72 durun varieties and hybrid selections grown in single rows replicated three times and 183 grown in but single rows. The latter includes nearly 100 durun wheats from foreign countries.

Average yields of 62 durum and 5 common varieties and hybrid selections of wheat grown in three row blocks, replicated three times at the Langdon Substation, Langdon, N. Dak., in 1928

Variety or Cross	C. I. No.	Nursery No.	Yield Bu. per Acre
Mindum x Pentad	----	II-19-149	44.6
Do	----	II-19-206	43.9
Do	----	881	41.4
Do	----	II-19-203	41.0
Do	----	II-19-207	40.1
Do	----	II-19-209	37.4
Do	----	II-19-225	36.4
Do	----	II-19-218	36.3
Do	----	II-19-199	36.1
Kubanka No. 8 x Pentad	----	1053	34.9
Do	----	1054	34.9
Mindum x Pentad	----	II-19-219	34.3
Do	----	II-19-116	34.1
Do	----	II-19-226	34.1
Do	----	II-19-126	33.7
Do	----	II-19-201	32.7
Kubanka No. 8 x Pentad	----	880	32.6
Mindum x Pentad	----	II-19-123	32.4
Do	----	II-19-227	32.4
Kubanka No. 8 x Pentad	8386	367	32.3
Do	----	II-19-159	32.2
Mindum x Pentad	----	II-19-223	31.7
Do	----	II-19-140	31.4
Mindum	5296	---------	31.2
Mindum x Pentad	----	II-19-91	31.1
Do	----	II-19-130	30.8
Kubanka No. 8 x Pentad	----	II-19-102	30.8
Mindum x Pentad	----	II-19-94	30.7
Kota x Marquis (common)	----	1656.48	30.6
Kubanka No. 8 x Pentad	----	II-19-98	30.6
Mindum x Pentad	----	II-19-138	29.6
Nodak x D-46	----	242.58	28.9
Do	----	242.39	28.6
Mindum x Pentad	----	II-19-86	28.6
Do	----	II-19-200	28.5
Do	----	II-19-137	28.4
Kubanka No. 8 x Pentad	----	II-19-101	28.4
Mindum x Pentad	----	II-19-85	28.3
Nodak x D-46	----	242.55	28.2
Kubanka No. 8	4063	III-20	27.7
Nodak x D-46	----	242.94	27.5
Mondak	7287	---------	27.4
Nodak x D-46	----	242.17	27.1
Do	----	242.58	26.8
Mindum x Pentad	----	II-19-222	26.6

(Continued)

Variety or Cross	C. I. No.	Nursery No.	Yield Bu. per Acre
Nodak x D-46	----	242.28	26.3
Do	----	242.51	26.3
Do	----	242.96	26.0
Mindum x Pentad	----	II-19-134	25.5
Kota x Marquis (common)	----	1656.44	25.5
Do	----	1656.84	24.9
Marquis (common)	3641	-------	24.9
Kubanka No. 8 x Pentad	----	II-19-154	24.3
Acme	5284	-------	24.0
Nodak x D-46	----	242.8	23.8
Do	----	242.67	23.6
Kubanka No. 132	8383	-------	23.4
Mindum x Pentad	----	II-19-136	23.3
Kota x Marquis (common)	----	1656.6	22.5
Kubanka	1440	-------	22.1
Mindum x Pentad	----	II-19-87	22.1
D-46	----	-------	21.9
Nodak	6519	-------	21.8
Mindum x Pentad	----	II-19-114	21.6
Kubanka No. 8 x Pentad	----	II-19-155	20.5
Pentad	3322	-------	19.9
Monad	3320	-------	19.5

The results show that there were 23 hybrid selections that yielded better than any standard durum varieties. Mindum was the highest yielding variety with a yield of 31.2 bushels, whereas the highest yielding hybrid selection produced 44.6 bushels per acre. Marquis yielded 24.9 bushels and the best Kota x Marquis strain but 30.6 bushels in the same experiment. Practically all of these durum strains were resistant to stem rust, having been bred for that purpose, whereas some of the foreign durums carried as much as 50 per cent of rust. A yellowing and premature drying up of the leaves appeared to be the most destructive disease or condition affecting the durum varieties. Lodging was general to the extent of about 50 per cent. Crude protein and gasoline color tests will be made on these durum varieties and strains in order to select for quality as well as for yield. This work with durum wheat, started this spring, is the first to be done in a typical durum-wheat territory, and it is hoped to develop the breeding of durum wheats at the Langdon station.

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (Joe L. Sutherland) (October 1)

The weather for the past two weeks has been cool, and there has been no precipitation. Field operations on the cereal project are nearly finished with the exception of seeding later dates of winter wheat. The summer fallow was cultivated with the duckfoot for the last time this season. Stubble land has been raked and is now being cultivated with the Wheatland plow.

The precipitation for the month of September was 0.41 of an inch, which is about one-fourth of the normal rainfall for this period. The 20-year average is 1.63 inches. Maximum temperatures from September 16 to 30 were 84 degrees on the 19th and 80 degrees on the 30th. The minimum temperature of 28 degrees on the 27th was the first killing frost recorded on the station. Precipitation 0.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C.W.Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (October 1)

Growers have been harvesting the early maturing rice varieties for the past ten days, and most of the Caloro will be ready to harvest between now and the 10th.

The early maturing varieties at the Station are mature and the mid-season varieties are nearly ripe. We expect to start harvesting today.

The temperatures in September were very favorable for maturing the crop, and the yields probably will be higher than the early estimates predicted.

The Rice Growers' Association has signed up about 90 per cent of the acreage this year and should be able to function in an effective manner.

The Annual Rice day was held at Richvale and at the Station on September 11. There was a good attendance. On September 14 the Annual Rice day was held at Cortena and a fairly good crowd attended.

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer (September 30)

More barberries were salted in Ohio in September than in any other month in 1928. More than two car loads of salt were used in treating 6,931 barberry bushes and 144,905 seedlings. However, progress in the matter of territory covered has seemed comparatively slow. Only 9 per cent of one county was covered by our entire force in September. Obviously, there will be about 25 per cent of Ashtabula County yet to be covered by first survey at the termination of field operations in the autumn of 1928. Ashtabula County is the last county in Ohio to be covered by first survey. Last spring it was hoped that the first survey of Ohio would be completed this year, but it now seems that the finishing of this task next year will consume half the time and effort of a crew as large as the force which was used this year.

Classes at Ohio State University started later than usual this year; consequently, the resignations of field agents were, as a whole, dated later than in other years. By the last day or two of September the greater number were back at their studies, however. It is expected that in October, and possibly part of November, there will be two crews of five men each in the field. A number of them are cooperators from the Ohio Department of Agriculture.

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Lear

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills [September 24]

An interesting incident, showing the results of high school cooperation in the barberry-eradication campaign following our educational program, was noted recently.

Mr. C. L. Kutil, Smith-Hughes instructor in the Antioch (Ill.) High School, sponsored a contest among his agricultural pupils in which points were given to each boy for killing rodents and other pests. One hundred points were offered also for each barberry bush found.

Robert Dalton, one of the agricultural pupils, located a purple barberry at the Allendale Farm, a private school for boys, near Lake Villa, Lake County.

Mr. Hutton visited the Allendale Farm with the writer on September 5 and created a great deal of interest among the boys by getting them to scout the property with him and then by showing by means of a hand lens the rust infection on the leaves of the bush.

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L.W.Melander

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel (September 24)

Field survey for the location and destruction of common barberry bushes will terminate September 30. During the summer 466 barberry bushes, 23 sprouts, and 951 seedlings were found and destroyed. In killing these bushes 697 gallons of kerosene and 920 pounds of salt were used.

The preparation of barberry educational material is in progress at the present time. This material has been supplied to 2,921 rural and grade schools in 35 counties of the State. It is planned to supply one-third of the counties with this material each year. The material is delivered to the county school superintendents, and they give it to their teachers at their Teachers' Institutes.

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham [October 8]

Losses from black stem rust in Montana this year have been very light. A number of local spreads of minor severity were recorded, but in only a few cases did these extend over an area of any size. The little damage occurring from this source was on late maturing fields of Supreme wheat. Supreme wheat showed a more severe infection of stem rust than did Marquis, in every case where a comparison was possible.

In the uniform rust nursery on the College Farm at Bozeman, no stem rust developed. Gallatin, Yellowstone, and Fergus counties were remarkably free from stem-rust infection this year, considering the number of fields of late-maturing spring wheat. Stem rust was more prevalent in the nursery at Willard, Mont. This nursery was seeded late and matured correspondingly late. The varieties of wheat most severely rusted were Little Club, Ruby, Power, and Haynes Blue Stem. These showed a prevalence of 100 and severity of 40 to 60. A few other varieties showed only a trace. Swedish Select oats were heavily rusted. White Tartar and Green Mountain were both infected, and a trace was present on a few other varieties. It was quite evident in this nursery that many varieties, even though sown late, matured before stem rust became prevalent.

A rust survey of northern Montana made by H. E. Morris and Dr. H. B. Humphrey about August 15 showed that a general trace of stem rust was prevalent as far west in Montana as Hill and Fergus counties. Local spreads also were present in Flathead and Ravalli counties west of the Continental Divide. Their observations indicated that in this region the only severe damage that could occur would be in late-planted fields of Supreme wheat.

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 26

October 20, 1928
Personnel (Oct. 11-20) and Field Station (Oct. 1-15) Issue

PERSONNEL ITEMS

Dr. A. G. Johnson, principal pathologist in charge of cereal-disease investigations, returned to Washington on October 13 after having made official stops at points in Indiana, Illinois, Wisconsin, Minnesota, North Dakota, South Dakota, Nebraska, Kansas, and Arkansas where he conferred with research workers regarding cooperative cereal disease investigations. Dr. Johnson reports that the work at the various points is progressing satisfactorily.

Paul D. Petersen was appointed pathologist, effective October 17, and assigned to the Arlington Experiment Farm where he will assist H. H. McKinney in the investigations of virus diseases of cereal plants, particularly the mosaic disease of wheat, rye, and corn. Mr. Petersen also will assist in the conduct of laboratory experiments on the nature of viruses.

VISITORS

Dr. Olaf S. Aamodt, formerly at University Farm, St. Paul, Minn., spent three days in Washington last week, calling on former Office associates. Dr. Aamodt has been appointed to the position of Cerealist at the University of Alberta, and expects to arrive in Edmonton on November 1.

While in Europe this summer Dr. and Mrs. Aamodt spent some time at the Seed Breeding Station at Svalöf, Sweden, and at the University of Oslo, in Norway, and at a number of points in Germany. They also visited agricultural experiment stations in Denmark, Belgium, France, England, and Wales.

Dr. Aamodt was associate pathologist of this Office from February 1, 1923, to June 15, 1928, during which time he conducted investigations on cereal diseases at St. Paul, Minn., in cooperation with the Minnesota Agricultural Experiment Station.

Mr. Oliver Wolcott Thomas, of Buenos Aires, a farmer and extensive land owner in Argentina, visited the Office early in October to consult with members of the Office staff concerning the culture of wheat and flax and the diseases of these crops. Mr. Thomas was especially interested in recent advances made in this country, and especially by the U. S. Department of Agriculture, in the treatment of seed wheat for the prevention of smut.

MANUSCRIPTS AND PUBLICATIONS

58 A manuscript entitled "Technique of Rice Hybridization in California," by Jenkin W. Jones, was approved on October 11 for publication in the Journal of the American Society of Agronomy.

59 A manuscript entitled "A Survey and Study of the Mosaic Diseases in West Africa, the Canary Islands, and Gibralter," by H. H. McKinney, was submitted on October 12 for publication as a Technical Bulletin.

Galley proof of article entitled "A Pythium Seedling Blight and Root Rot of Dent Corn," by Helen Johann, James R. Holbert, and James G. Dickson, was read October 19.

Galley proof of article entitled "Plant Characters and Yield in Grain Sorghums," by John H. Martin, was read on October 19.

The paper entitled "Cooperation in Corn Borer Research," by Carleton R. Ball, appears in the Journal of the American Society of Agronomy 20 (10): 1033-1047. October, 1928. (Read before the joint meeting of the Society and Section O of the American Association for the Advancement of Science at Nashville, Tenn., Dec. 27, 1927.)

The paper entitled "The Prevalence of Mixtures in Marquis Wheat Grown in Central Montana in 1926," by Karl S. Quisenberry, J. Allen Clark, and B. B. Bayles, appears in the Journal of the American Society of Agronomy 20 (10): 1055-1063. October, 1928. (Read at the meeting of the Western Section of the American Society of Agronomy held at Davis, Calif., June 19 to 21, 1928.)

The article entitled "Equality of Kernel Row Numbers in Reciprocal Corn Crosses," by Frederick D. Richey and H. S. Garrison, appears in the Journal of the American Society of Agronomy 20 (10): 1069-1072. October, 1928.

Farmers' Bulletin 1577 entitled "Harvesting Grain Sorghums," by John H. Martin, L. A. Reynoldson, B. E. Rothgeb, and W. M. Hurst, was received from the Government Printing Office on October 13. (16 pp., 13 figs.) September, 1928. (Bureaus of Agricultural Economics, Public Roads, and Plant Industry, of the United States Department of Agriculture, the Kansas Engineering Experiment Station, and the Kansas and Oklahoma agricultural experiment stations, cooperating.)

The article entitled "Further Studies in Quantitative Virological Methods," by H. H. McKinney, appears in Science 68 (1764): 380-382. October 19, 1928.

The papers entitled "Seeing All Sides of a Complex Problem," and "Wheat Breeding for Yield, Quality, and Disease Resistance," by Carleton R. Ball and J. Allen Clark, respectively, appear in the mimeographed Report of the First Annual Hard Spring Wheat Conference held at the North Dakota Agricultural College, Fargo, North Dakota, March 27, 1928.

CORRECTION

In the Cereal Courier of August 31, 1928 (Vol. 20, No. 21), the word "rust" in line 7, paragraph 3, should read "disease."

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins) (October 15)

The last three weeks have been exceptionally favorable for harvesting the hand-pollinated ears of corn. The last of them were gathered last week and appear to be of better than average quality. They are being dried this year in the new Farm Crops building at the Agronomy Farm.

The harvesting of the yield experiments at the Agronomy Farm and of the Iowa Yield Test experiments over the State is being started today. It is expected that acre yields will be larger than usual this year. The favorable growing conditions this year made the plants grow taller than usual and several heavy wind storms blew down a large percentage of the plants in some lines.

We have just finished moving our offices from Old Agricultural Hall to New Agricultural Hall. All of the Farm Crops Department is now concentrated in New Agricultural Hall.

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (October 16)

The long drought of 1928 was finally broken by two rains totaling 1.40 inches of water. As is usual with climatic conditions the severity of the drought varied, and in some communities within fifty miles of here 1928 will be remembered as an excellent crop year. In this vicinity it will rank close to average for grain yields, but forage yields will be light.

All the broomcorn, with the exception of an increase field for seed, has been harvested. Most of the grain sorghums are harvested and seed heads are now being selected for the nursery.

There has been no frost yet, but the indications are that it will be earlier than usual.

Maximum temperature for first half of October, 96 degrees on the 4th and 6th; minimum for same period, 43 degrees on the 15th. Precipitation 1.41 inches on October 10 and 11.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (October 15)

The timely rains of yesterday and today have broken a drought of nearly two months' duration. These rains will be of special value in the germination of winter wheat throughout the western half of Kansas. While the subsoil in well tilled fields had plenty of moisture, the first six inches of surface soil was too dry to enable the wheat to germinate satisfactorily. With the recent rains the prospects are favorable for getting wheat well established before cold weather.

Both sorghums and corn promise good yields, not only in the vicinity of Hays, but throughout Kansas. This also is true for winter wheat and other small grains. According to J. C. Mohler, Secretary of the Kansas State Board of Agriculture, the total agricultural products raised in 1928 will be the largest in the history of the State.

Supt. L. C. Aicher had the misfortune to lose a finger while adjusting an experimental silage cutter. Later the wound became infected, causing a very painful condition, but which has since been brought under control.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (October 15)

The weather of the first half of October has been mostly favorable for field operations. Threshing at the Substation is completed and but little threshing in the vicinity remains to be done. There has been practically no rain for a month to interfere with threshing except a shower and snow flurry last week.

The winter-wheat nursery, sown the last week in August, emerged with fairly good stands and has made considerable growth. Plots of winter wheat and rye sown in September have germinated very unevenly because of the dry condition of the soil. Grasshoppers were unusually numerous this fall but were prevented from injuring the nursery by repeated poisoning with poisoned bran.

In the following table are presented the acre yields and some of the other data obtained from 60 varieties of spring wheat grown in triplicated 3-row blocks this year. The bunt percentages were obtained from a separate nursery grown from bunt-inoculated seed. The yields of the common wheats varied from 20.3 bushels per acre for Quality to 37.8 bushels for Reliance Sel. No. 64 and Marquis x Kota (1656.84), while yields of the 10 durums ranged from 30.6 bushels for a crossed strain to 40.3 bushels for Nodak.

Yields and percentages of rust obtained from spring-wheat varieties and hybrids grown in triplicated 3-row blocks, and smut (bunt) percentages obtained from the same wheats grown in a separate smut nursery from seed inoculated with Tilletia laevis at the Dickinson Substation in 1928

Variety	C.I. No.	Yield (Bu. per acre)	RUST (Per cent) Leaf	RUST (Per cent) Stem	Bunt (Per cent)
Common					
Marquis x Kota (1656.84)	8004	37.8	18	2	52.5
Reliance Sel. No. 64	----	37.8	25	14	18.0
Marquis x Kota (1656.48)	----	37.5	15	5	45.0
Reliance Sel. No. 7	----	36.2	12	8	4.5
Do Sel. No. 22	----	36.2	22	16	16.0
Kota x Webster H-209	----	35.4	12	1	53.0
(Kanred x Marquis) x (Kota x Hard Federation) 6-4	----	35.1	18	4	55.5
Ceres (Average of checks)	6900	34.9	23	5	62.9
Kota x Kanred B 11-1-1	----	34.6	25	5	25.5
Marquis x Sunset 5-7-4	----	34.5	20	9	23.0
Kota x Webster H-178	----	34.4	10	4	39.5
Kota x Kanred B2-1-7	----	34.2	15	3	0.0
Marquis x Kota (1656.85)	----	33.7	14	5	50.0
(Kota x Hard Federation) x (Kanred x Marquis) A3-3-2	----	33.1	8	6	58.0
Reliance	7370	32.7	15	12	24.0
Kanred x Marquis B2-14-20	----	32.3	20	10	31.0
Marquis x Kota 1656.20	----	32.2	22	4	65.5
Kanred x Marquis B9-11-27	----	32.2	18	10	9.5
Do B5-14-3	----	32.2	10	8	59.0
Marquis x Kota II-19-51	----	31.9	25	1	66.5
Axminster	----	31.9	40	12	5.0
Marquis x Kota 1656.44	----	31.8	18	6	43.0
Marquis (Average of checks)	3641	31.7	15	16	24.3
Kanred x Marquis B9-11-50	----	31.3	15	12	27.0
Reliance Sel. No. 16	----	31.0	18	12	17.5
Marquis x Kota (1656)	6898	30.7	20	4	47.5
Kota x Webster H-123	----	30.3	25	8	53.5
Marquis x Kota (1656.81)	----	30.2	15	1	47.0
Do (1656.6)	----	29.9	22	4	39.5
Do (1656.118)	----	29.6	20	3	57.5
Kota	5878	29.6	45	3	74.0
Kanred x Marquis B9-14-42	----	29.4	28	18	38.5

(Continued)

Variety	C.I. No.	Yield (Bu. per acre)	RUST (Per cent) Leaf:	RUST (Per cent) Stem:	Bunt (Per cent)
Common (continued)					
Hope	8178	28.8	T	T	1.0
Marquis x Kota (1656.125)	----	28.4	20	8	47.5
Kanred x Marquis B9-14-24	----	28.4	25	15	24.0
Renfrew	----	28.3	30	20	13.5
Kota x Hard Federation 4-2-9	----	28.2	22	5	47.5
Marquillo	6887	28.0	28	8	7.0
Supreme	----	27.2	25	20	46.0
Marquis x Kanred II-17-40	8018	27.0	18	10	30.0
Marquis x Kota (1656.123)	----	26.7	25	7	62.0
Do (1656.90)	----	26.2	15	3	45.5
Red Bobs No. 222	----	25.6	25	22	47.5
Kanred x Marquis 5-14-3	----	25.5	5	15	11.5
Kota x Hard Federation	8197	25.4	20	3	35.0
H-44	----	25.3	T	T	0.5
Garnet	8181	22.5	40	18	31.0
Marquis x Kota (1656.97)	----	22.3	15	5	45.5
Reward	----	20.7	25	18	60.5
Quality	6607	20.3	28	18	11.5
Durum					
Nodak	6519	40.3	3	T	6.5
K-132	----	38.8	3	T	6.0
Kubanka	2094	37.1	2	T	3.3
Mindum	5296	37.1	1	T	10.5
Kubanka	1440	36.8	5	3	7.5
Nodak x Mondak (21-29)	----	36.2	1	T	---
Monad	3320	36.1	2	T	13.5
Mondak	7287	33.4	2	2	7.0
Nodak x K-144 (B31)	----	32.9	3	T	---
Do (B34)	----	30.6	2	T	---

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus)

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (Joe L. Sutherland) (October 15)

The first heavy snow of the season fell during the second week of October and was accompanied by a low temperature of 11 degrees. Practically all crops have been harvested in the Basin so that the storm caused but small loss to farmers. Fields of early sown winter wheat are showing a decided yellowing of the leaves, probably due to Helminthosporium which caused large losses in winter wheat during the past season.

Karmont winter wheat will be sown on two more dates this fall, if weather conditions permit.

The precipitation for the first 15 days in October was 0.89 of an inch, while the 20-year average for the month of October is 1.19 inches. Maximum temperature, 77 degrees on the 10th; minimum, 11 degrees on the 13th.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

San Antonio Field Station, San Antonio, Texas (George T. Ratliffe, Supt.) (September 22, 1928)

The flax varieties were sown in field B-4 on December 22, 1927. Only a few varieties had emerged by January 1 when a minimum temperature of 16 degrees F. occurred. The varieties Redwing and Winona especially suffered reduced stands.

Drought prevailed during much of the growing period. A rain of 2.0 inches on May 7 to 9 was too late to benefit the flax varieties which were already ripening. The plots in the later dates of seeding dried up instead of ripening normally.

Acre yields of flax varieties grown at the San Antonio (Texas) Field Station as a fall-sown crop, 1927-1928

[Seeded December 22, 1927.]

Group and Variety	C.I. No.	Date of Ripening	Test weight	Yield (Bu. per acre) Series 1	Series 2	Series 3	Average
Argentine:							
Rosquin	109	May 21	52.0	13.7	13.6	14.3	13.9
Morteros	107	21	52.5	13.0	12.4	14.6	13.3
Rio (L.79)	280	18	52.5	8.1	11.4	11.6	10.4
European:							
Sel. 4-1	260	20	52.5	11.9[a]	11.9	13.4	12.4[b]
N.D.R. 114	13	17	52.0	9.8	11.8	11.8	10.9
Bison	379	21	52.5	9.5[a]	10.1	9.8	9.8
Linota	244	18	54.0	8.6	9.2	11.4	9.7
N.D.R. 720	318	18	54.0	7.9	7.4	10.4	8.6
Winona	179	19	51.5	6.9	5.5	6.4	6.3
Redwing	320	18	52.0	2.8	4.5	4.9	4.1

[a] Two varieties mixed—yield computed.

[b] Average of 10 check plots.

Date-of-Seeding Test, 1927-1928

Date: Seeded	Emerged	Bloomed	Ripened	Yield (Bu. per acre)
December 22	January 13	March 29	May 17	8.1
January 21	February 2	April 7	June 10	0.3[a]
February 24	March 1	April 23	June 22	1.4[a]
March 19	March 24	May 7	June 30	1.3[a]

[a] Damaged by hail on June 10.

Imperial Valley Experiment Station, El Centro, California (L. G. Goar, Foreman) (August 11, 1928)

Ten varieties of seed flax were grown in single 50-foot rows, 1 foot apart, under irrigation.

[Seeded November 14; emerged November 23, 1927.]

Variety	C.I. No.	Date of Ripening	Height (Inches)	Test Weight (Lbs.)	Oil (Per cent)	Yield (Bu. per acre)
Blanc	323	4-2	32	56.5	39.0	27.8
Damont	3	4-17	36	55.5	37.8	24.3
Newland	188	4-17	35	55.0	36.4	22.6
Linota	244	4-10	32	56.0	33.5	22.1
Winona	179	4-10	32	55.0	36.2	21.9
Redwing	320	4-7	32	56.0	32.3	21.7
Giza	378	4-21	26	53.0	35.6	30.8
Rio (L.79)	280	4-21	32	53.0	36.1	17.7
Punjab	20	4-17	24	56.0	36.1	31.2
Abyssinian	36	4-12	24	54.5	37.4	28.4

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L. W. Melander (October 11)

All second-survey activities were terminated on September 15. During 1928, progress of the intensive survey was very slow. The greatest effort was put forth in Hennepin County, the intensive survey of which was started in April. Six men worked in this County until September 15. After the first of August, four additional men worked in the northern part of the county. Only six townships were completed. The second survey of Carver County was started on June 12 and continued until September 15. In this county also only six townships were completed. In addition, three townships in LeSueur County were completed, making a total of 15 townships, or, less than a county, surveyed in 1928. At this rate the second survey is slower than the stem-rust situation demands.

In order to keep down the production of fruiting bushes in known areas of escaped bushes, a resurvey was made of Freeborn, Nicollet, Houston, and parts of Fillmore and Olmsted counties. From September 24 to October 13, a resurvey is being made of areas of escaped bushes in the two latter counties. Very few fruiting bushes were found, but numerous small bushes which would have fruited next year, were found and salted. Practically no seedlings bearing cotyledons were found in these areas, indicating that there is practically no old seed germinating and that there is a possibility of cleaning these districts from common barberry.

During September, 2,427 bushes, of which 2,215 were escaped, were found and destroyed on 29 properties. Most of these were from Houston and Fillmore counties.

On October 15, an intensive survey of the Minnesota River bottoms will be started. One crew will survey eastward from Ortonville and the other will work westward from Montevideo. Each crew will have four men. A four-man crew has been found to work the best on steep hillsides because a larger crew is cumbersome going around knolls and through draws. A long survey-line of men causes much loss of time going over rough contours. At this season of the year all the shrubs but common barberry are losing their leaves. This will make intensive survey comparatively easy. It is at this season of the year when the most efficient survey can be done.

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger (October 4)

Beginning October 1, the barberry-eradication force in South Dakota was reduced to two men. These men will work in Grant County on third, or check, survey as long as weather conditions permit. October usually is a splendid month for field operations in this State. However, it was impossible to keep men on the job due to resignations necessary because of the desire of the men to continue college and graduate studies and to accept teaching positions.

The principal survey activity this year consisted of second survey in Bon Homme and Hutchinson counties, and third, or check, survey in Grant and Hamlin counties. Nearly three counties were completed in these two surveys. Some resurvey was done in other counties, especially in areas of known escapes. A rather careful rust survey was made during the spring and early summer, or until harvest time.

A total of 1,224 bushes, sprouting bushes, and seedlings has been found to date (October 1) on approximately 50 different properties. Of this number 835 were escapes and seedlings. These results demonstrate the necessity of covering all natural and planted timber carefully, as well as all fence rows and other places where barberries may possibly grow.

In spite of the fact that losses from stem rust in South Dakota probably will not exceed 1 per cent this year, it was an unusually favorable season to show isolated areas of stem-rust infection. In two of these areas the responsible barberries already have been found. The other areas will be investigated as soon as time and funds permit.

Only three major fair demonstrations were arranged this year. These were at the State Fair, Huron; Tri-State Fair, Aberdeen; and the Clay County Fair, Vermilion. Other smaller demonstrations were held at county fairs, farmers' picnics, agronomy field days, etc.

One of the most encouraging observations this year was the attitude of the people, especially the business men in the smaller cities and towns. They cooperated in a splendid manner. They were eager to learn and anxious to be of service. In several instances business firms asked for barberry demonstrations to be placed in their windows. Newspaper editors used the barberry stories in nearly every instance. There are, of course, quite a few who are not entirely sold on the merits of the work, but the situation is showing considerable improvement.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G.C.Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING -

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 27

October 31, 1928
Personnel (Oct. 21-31) and Project Issue

PERSONNEL ITEMS

E. R. Ausemus, assistant agronomist in charge of the cooperative wheat investigations at the Northern Great Plains Field Station, Mandan, N. Dak., came to Washington on October 26 to remain for about six months. He will assist the senior agronomist in charge of western wheat investigations in the absence of Mr. Quisenberry, who is temporarily in charge of the cooperative wheat breeding project at University Farm, St. Paul, Minn. Mr. Ausemus also will assemble data and write reports on the investigations of the past year at Mandan, N. Dak.

Miss Marion A. Griffiths, associate pathologist in cereal-smut investigations, was married on October 27 to Dr. Harry Zehner, of Washington, D. C. Mrs. Zehner will continue her research work in this Office.

Dr. J. H. Martin, associate agronomist in charge of grain sorghum and broomcorn investigations, returned to Washington on October 31 after a three months' trip in various western States. Dr. Martin took part in an economic survey of broomcorn production in the Washita Valley in the vicinity of Lindsay, Okla., in southwestern Kansas, and east central Illinois. Just previous to this survey he made a tour of the grain-sorghum area of Kansas, Oklahoma, Texas, and New Mexico, accompanied by M. A. McCall, principal agronomist.

M. A. McCall, principal agronomist in charge of the agronomic section, returned to Washington on October 29 after an extended trip in Indiana, Iowa, Missouri, Kansas, Texas, Oklahoma, Idaho, California, Oregon, Washington, Montana, North Dakota, and Minnesota.

VISITORS

Mr. Martin J. Hoare, Chief Chemist of Tooth and Co., Limited, Sydney, Australia, was an Office visitor on October 27. He conferred with members of the staff concerning the possibility of obtaining samples of barley varieties from California for testing in Australia. Mr. Hoare also will visit the California Agricultural Experiment Station, Berkeley, Calif., and the University Farm at Davis.

Dr. W. H. Tisdale, of the E. I. Du Pont de Nemours and Company, Inc., Wilmington, Del., was an Office visitor on October 27.

Dr. T. O. Walton, President of the Texas Agricultural and Mechanical College, College Station, Tex., called at the Office on October 30.

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CORRECTION

In the Cereal Courier of October 20, 1928 (Vol. 20, no. 26), page 323, an error was made in designating the appointment of Paul D. Peterson as that of Pathologist. The correct title is Assistant Pathologist.

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MANUSCRIPTS AND PUBLICATIONS

60 A manuscript entitled "Flax Cropping in Mixture with Wheat, Oats, and Barley," by A. C. Arny, T. E. Stoa, Clyde McKee, and A. C. Dillman, was submitted on October 26 for publication as a Technical Bulletin of the Department series.

61 A manuscript entitled "Smuts and Rusts in Cereals Produced by Hypodermic Injection of Inoculum," by Marion A. Griffiths and Harry B. Humphrey, was submitted on October 31 for publication in the Journal of Agricultural Research.

Galley proof of article entitled "Seed-Coat Structure and Inheritance of Seed Color in Sorghums," by Arthur F. Swanson, for publication in the Journal of Agricultural Research, was read on October 25.

Galley proof of article entitled "A Bacterial Stripe Disease of Sorghum," by Charlotte Elliott and Erwin F. Smith, for publication in the Journal of Agricultural Research, was read on October 30.

The article entitled "The Fulghum .. Oat in California," by T. R. Stanton and V. H. Florell, appears in The California Cultivator 71 (16): 381, 403, illus. October 20, 1928.

The paper entitled "The Relation of Temperature to the Development of Disease in Plants," by James G. Dickson and James R. Holbert, appears in The American Naturalist 62 (681): 311-333. July-August, 1928. (Read as a part of the Symposium on "Temperature and Life" at the meeting of the American Society of Naturalists held in Nashville, Tenn., Dec. 30, 1927.) (The investigations upon which this paper is based were conducted cooperatively between the Wisconsin Agricultural Experiment Station, the Office of Cereal Crops and Diseases, U. S. Department of Agriculture, and Funk Brothers Seed Company, of Bloomington, Ill.)

HARD RED WINTER WHEAT CONFERENCE

A conference of agricultural, scientific, and commercial representatives of the States producing hard red winter wheat has been called by President F. D. Farrell, of the Kansas State Agricultural College, for November 8, at Manhattan, Kans. There will be a full discussion of biologic and economic problems connected with the production of hard red winter wheat. Ways and means of promoting a more thorough and adequate research program will be considered.

The following members of the scientific staff of this Office have been authorized to attend: Dr. C. R. Ball, M. A. McCall, Dr. C. E. Leighty, K. S. Quisenberry, Dr. E. C. Stakman, G. F. Sprague, A. F. Swanson, Dr. Hurley Fellows, and C. O. Johnston.

A tentative program for the conference has been prepared and is appended herewith.

TENTATIVE PROGRAM

Wheat Improvement Research in the Southern Great Plains

November 8, 1928
Forenoon Session
(9:00-12:00)

Time (Minutes)	
15	F. D. Farrell, President Kansas State Agricultural College, presiding. The Need for an Enlarged Wheat Research Program in the Southern Great Plains.
15	E. H. Hodgman, Farmer, Little River, Kansas. What a Wheat Research Program Will Mean to the Wheat Farmer.
20	C. R. Ball, Principal Agronomist, Office of Cereal Crops and Diseases, U. S. Department of Agriculture. What the United States Department of Agriculture is doing and Hopes to do in Producing Better Varieties of Hard Winter Wheat.

Time (Minutes)	
20	Nils A Olson, Chief, Bureau of Agricultural Economics, U. S. Department of Agriculture. Research Work of the Bureau of Agricultural Economics in Marketing Wheat as Related to Quality.
20	H. M. Bainer, Director, Southwestern Wheat Improvement Association. Research as a Basis for a Wheat Improvement Program.
15	C. C. Cunningham, President, Kansas Crop Improvement Association. Why the Southwest Needs Improved Wheat Varieties.
15	C. M. Hardenbergh, President, Southwestern Milling Co., Kansas City, Mo. Some of the Millers' Problems and How an Enlarged Research Program May Help in Their Solution.
20	Sam McDonald, Vice President, Continental Baking Co., New York City. The Importance of Quality in Hard Red Winter Wheat.

Afternoon Session
(1:30 - 4:30)

Dr. A. F. Woods, Director of Scientific Work, U. S. Department of Agriculture, presiding.

State Wheat Improvement Research Programs for the Southern Great Plains.

Kansas. L. E. Call, Director, Kansas Agricultural Experiment Station.

Nebraska. W. W. Burr, Director, Nebraska Agricultural Experiment Station.

Texas. A. B. Conner, Director, Texas Agricultural Experiment Station.

Oklahoma. C. E. Sanborn, Acting Director, Oklahoma Agricultural Experiment Station.

Colorado. C. P. Gillette, Director, Colorado Agricultural Experiment Station.

Discussion.

Appointment of Committees.

Dinner - 6:15 P.M.
Wareham Hotel

J. C. Mohler, Toastmaster
Reports of Committees.

Remarks - Senator Arthur Capper

Carl Williams, Editor, Oklahoma Farmer and Stockman, Oklahoma City, Okla.

Clyde Reed, Editor, Parsons Sun, Parsons, Kans.

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 28

November 10, 1928
Personnel (Nov. 1-10) and Field Station (Oct. 16-31) Issue

NOTICE

Beginning with the December issue, the Cereal Courier will appear semimonthly. The issues will be dated the 15th and last days of each month. This semimonthly appearance will be continued until April 1, 1929, on which date the trimonthly issues will be resumed and continued throughout the growing season. Contributors of news items for the Cereal Courier will kindly continue to send notes on the 15th and last days of each month.

PERSONNEL ITEMS

L. W. Boyle, agent in the cooperative investigations of flax diseases at Fargo, N. Dak., left his headquarters on November 7 for St. Paul, Minn., to confer with H. A. Rodenhiser, in charge of the cooperative investigations of flax diseases at University Farm, St. Paul, Minn. Mr. Boyle will then proceed to Madison, Wis., where he will remain for the winter months and into the spring of 1929 to conduct special investigations with the pasmo and wilt diseases of flax in temperature and humidity control chambers. These investigations will be conducted under the direction of Dr. James G. Dickson, agent in the cereal-disease investigations conducted by this Office in cooperation with the Wisconsin Agricultural Experiment Station.

James M. Wallace, agent in barberry eradication in Minnesota, resigned his position on November 5 to enter another line of work.

VISITORS

Dr. M. Kondo, Director of the Ohara Institute for Agricultural Research, of Kurashiki, Japan, was an Office visitor on November 1. He consulted with Mr. Chambliss about rice culture. He also will visit the Biggs Rice Field Station, Biggs, Calif., to consult with Supt. J. W. Jones on the cultivation of rice in California.

MANUSCRIPTS AND PUBLICATIONS

62 A manuscript entitled "The Water Content of Wheat during the Flowering and Maturation Periods," by Annie M. Hurd-Karrer and J. W. Taylor, was approved on November 2 for publication in Plant Physiology.

63 A manuscript entitled "Registration of Improved Wheat Varieties, III," by J. Allen Clark, J. H. Parker, and L. R. Waldron, was approved on November 2 for publication in the Journal of the American Society of Agronomy.

Galley proof of article entitled "Some Chemical and Morphological Phenomena Attending Infection of the Wheat Plant by Ophiobolus graminis Sacc.," by Hurley Fellows, for publication in the Journal of Agricultural Research, was read on November 6.

Page proof of Farmers' Bulletin 1358 (revised) entitled "Growing Rye in the Western Half of the United States," by John H. Martin and Ralph W. Smith, was read on November 3.

The article entitled "Pythium arrhenomanes n. sp., a Parasite Causing Maize Root Rot," by Charles Drechsler, appears in Phytopathology 18 (10): 873-875. October, 1928.

The article entitled "Daily Growth and Oil Content of Flaxseeds," by A. C. Dillman, appears in the Journal of Agricultural Research 37 (6): 357-377, figs. 1-12. Sept. 15, 1928.

The article entitled "The Influence of Oxygen and Carbon Dioxide on the Growth of Ophiobolus graminis in Pure Culture," by Hurley Fellows, appears in the Journal of Agricultural Research 37 (6): 349-355, figs. 1-5. Sept. 15, 1928. (Cooperative investigations between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.)

B.P.I.Memo. 382 November 1, 1928

MEMORANDUM FOR HEADS OF OFFICES

Gentlemen:

With a view to a close coordination of the horticultural activities of the Bureau of Plant Industry, the offices of Crop Physiology and Breeding, Fruit Diseases, Vegetable and Forage Diseases, except the cotton and forage disease work, the Pathological Laboratory, except the photographic unit and work on tobacco diseases, and the physiological section of Plant Geography and Physiology, are hereby consolidated with the Office of Horticulture, the consolidated unit to be designated as the Office of Horticultural Crops and Diseases. The forage disease work is transferred to the Office of Forage Crops, the cotton disease work to the Office of Cotton, Rubber and Other Tropical Plants, the photographic unit of the Pathological Laboratory to Mycology and Disease Survey, and the work on tobacco diseases to Tobacco and Plant Nutrition.

Dr. Eugene C. Auchter, head of horticulture at the University of Maryland, has been appointed as Principal Horticulturist in Charge of the Office of Horticultural Crops and Diseases, effective November 16, 1928. He will assume administrative supervision and direction of the scientific and related work of the consolidated unit. I bespeak for him your hearty cooperation.

Very sincerely,

WM. A. TAYLOR

Chief of Bureau.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (October 10)

Weather conditions have been unfavorable to the growth of fall-sown small grains. Oats sown the last week of September were favored by a good rain, and germination was excellent. Barley and wheat were sown some days later in a dry seed bed, however, and the meager rainfall in October resulted in very poor stands. The rainfall for the month was only 0.77 of an inch and this has not benefited stands materially.

The fall broods of aphids have been unusually frequent and active. The injury they have caused, especially to barley, is as yet difficult to estimate. Outright killing of plants is common, especially on the lighter soil where moisture is limited. Wheat and oats seeded as spaced plantings in the nursery also are being killed or weakened by the aphids. A few good freezes are much needed to control this pest.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains) (November 2)

The winter-wheat nursery was seeded on the Wilson Farm at La Fayette September 26 to 28. The weather preceding seeding was fairly dry and the land was in ideal condition. There were a few light rains following seeding, and the nursery is in unusually good condition. It contains 2,985 rows.

Seventy-four varieties and selections are being tested for rust and yield in a replicated rod-row nursery, three replications of three rod-row plots. A number of selections are being grown in three rod rows for the first time this season and others are being multiplied in single ten-foot and rod rows for another year's rust test before testing for yield. The F_2 of 22 wheat crosses was spaced for the study of winter hardiness and leaf-rust reaction. A nursery of 200 rod rows was sown for dusting with sulphur to obtain data on the effect of the rust on yield. The most promising of the rust-resistant selections were seeded adjacent to the agricultural experiment station for study of reaction to bunt and other diseases.

Sets of 109 of the most promising of the winter varieties obtained in studies at La Fayette and Manhattan were sent out for sowing at Experiment, Ga., Knoxville, Tenn., Arlington, Va., Vincennes, Ind., La Fayette, Ind., Wanatah, Ind., and Madison, Wis. Similar sets have been sent out by Mr. Johnston for planting in the Great Plains region. Thirty-five spring wheats also were included for sowings in the south.

The cultures and collections of leaf rust which have been stored in the refrigerator all summer have been sown on susceptible varieties in preparation for greenhouse studies of physiologic forms. We have an unusual number of collections this year as the result of the kindness of barberry scouts in collecting leaf rust in their various States. Mr. Compton and Mr. Bockstahler now have several of the physiologic forms, used most extensively, sown on sets of differential varieties to determine purity of the cultures in preparation for use in physiologic and genetic studies.

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (November 1)

Precipitation in the last half of October made up for some of the drought earlier in the year. However, the results are not so favorable as if the moisture had been present during August.

Fortunately all of the plots of grain sorghums were headed in wire baskets and these are under cover. Therefore, the rain did little damage to our grain. Because of the moisture in the air it will require a few drying days before the baskets of heads are dry enough to thresh.

Seed heads have been selected from all plots and most rows. The exceptions are the very late maturing nursery rows which may ripen before frost, though present indications are doubtful.

Minimum temperature for last half of October, 34 degrees on the 22nd; maximum for same period, 80 degrees on the 25th. Precipitation, 3.13 inches, or a total of 4.54 inches for October, making a total of 21.74 inches for the year to date.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J.H.Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (October 29)

Today we are having a moist wet snow which will greatly benefit the new crop of wheat.

We have almost finished the threshing of the sorghums. The yields will be from 40 to 70 bushels to the acre. Corn will average 40 bushels. With the yields of wheat, oats, and barley the highest in years one can readily see that this is the banner year, not only on our project but throughout Kansas.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (November 1)

The corn varieties which were harvested and shocked on September 27 were husked on October 29. Samples of each were hung up to dry out more completely before computing the final air dry yield. As usual, the early flint varieties gave the highest yield of ripe corn. Most of the early dent and semi-dent varieties were fairly well matured. Falconer semi-dent yielded slightly more than any other semi-dent or dent variety.

The weather has continued dry throughout most of September and October. This has been of great help to farmers of the State, who have had an unusually heavy crop to thresh. Threshing is nearly completed in this section and probably over most of the State.

All field operations at the Substation are about finished for the season.

Although the time for winter weather is approaching there has been but very little snow so far and that soon disappeared. There is a prospect for zero weather tonight making the lowest temperature since last March.

Yields obtained from a combined rate-and-date-of-seeding experiment with Ceres, Marquis, and Nodak spring wheat are presented in the following table. This experiment has been conducted with some changes for five years. The middle of May seeding usually has given the lowest yields but this year, due to drought in May and abundant moisture in June and July, the last seeding gave the highest yields in the case of all three varieties.

Mr. M. A. McCall visited the Substation on October 21.

Yields obtained from a rate-and-date-of-seeding experiment with Marquis, Ceres, and Nodak spring wheat sown at four rates on three dates on the Dickinson Substation in 1928

Date of Seeding	Yield (Bu. per acre)															Av. 3 varieties
	Ceres					Marquis					Nodak					
	Rate of seeding (Pecks per acre)					Rate of seeding (Pecks per acre)					Rate of seeding (Pecks per acre)					
	3	4	5	6	Av.	3	4	5	6	Av.	3	4	5	6	Av.	
4/14	28.8	29.8	25.4	27.0	27.8	27.1	29.3	25.2	31.9	28.4	23.8	27.1	25.9	27.0	26.0	27.4
5/1	25.5	23.5	22.0	33.4	26.1	25.3	29.0	30.2	29.0	28.4	26.7	26.8	28.7	29.0	27.8	27.4
5/17	25.8	43.0	34.1	30.3	33.3	31.4	31.5	31.6	32.8	31.8	29.7	29.0	33.0	33.7	31.4	32.2
Av.	26.7	32.1	27.2	30.2	29.1	27.9	29.9	29.0	31.2	29.5	26.7	27.6	29.2	29.9	28.4	29.0

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (November 2)

The weather in October was generally mild and favorable for outdoor work. The first half of October was very mild. On only three days were freezing temperatures recorded. The weather became increasingly cold in the latter part of the month, and freezing temperatures were recorded every day for the last nine days of the month. Maximum temperature for October, 76 degrees on the 7th and 9th; minimum, 8 degrees on the 28th.

There was very little cloudy or rainy weather in the entire month, and the total precipitation was only 0.19 of an inch.

Harvest of all flax was completed on October 10, except for an experiment to be left standing until spring to determine the loss of bolls and seed at intervals during the winter.

Yields from plot experiments are as follows:

The yields of flax varieties given in the October 10 issue of the Cereal Courier were in pounds per plot. The correct yields, in bushels per acre, are given in the following table:

Yields of 13 flax varieties grown in triplicated 50th-acre plots at the Northern Great Plains Field Station, Mandan, N. Dak., in 1928

Variety	C. I. No.	Yield (Bu. per acre)
Sib. 206	[illegible]	10.7
N. D. No. 40013	241	10.6
Rio (Long No. 79)	280	10.5
Slope	274	10.5

(Continued)

Variety	C. I. No.	Yield (Bu. per acre)
Linota	244	10.3
Redwing	320	10.3
Buda (N. D. R. 119)	326	9.8
Hybrid 19 x 112	385	9.6
N. D. R. 52 (N. D. 3080)	275	9.2
Bison	389	8.8
Sel. 179-9	---	8.1
Winona	179	7.2
N. D. R. 114	13	5.0

Yields of 17 flax varieties and selections grown in duplicated 50th-acre plots at the Northern Great Plains Field Station, Mandan, N. Dak., in 1928

Variety	C. I. No.	Yield (Bu. per acre)
Sel. C. I. 119	---	14.2
Sel. 167-254	---	13.5
Sel. Hyb. 167x 179	---	12.7
Sel. C. I. 112	---	11.9
Linota Sel.	---	10.9
Hyb. 19 x 112 Sel.	---	10.3
C. I. 161 Sel. A	---	10.0
Sel. 8-17	---	9.9
Sel. 8-21	---	9.4
Hyb. 19 x 112	383	9.1
Hyb. 19 x 112	384	8.8
Linota (check)	244	8.7
Chippewa	178	8.2
C. I. 161 Sel. B	---	8.1
Winona (check)	179	5.7
Sel. 179-1	---	5.7
N. D. R. 114 (check)	13	5.4

Results from flax date-and-rate-of-seeding-and-tillage experiment in 50th-acre plots at the Northern Great Plains Field Station, Mandan, N. Dak., in 1928

Treatment	Date of Seeding	Rate per acre (Lbs.)	Stand of plants per acre (1,000's)	Air-dry weight of all weeds Lbs. per acre	Yield (Bu. per acre)	Average of three rates
DDH	4-21	16	668	1,800	4.8)	
DDH	do	24	1,063	1,396	5.5)	5.2
DDH	do	32	1,132	2,374	5.3)	
DD 4-21, DDH	4-30	16	395	1,705	4.8)	
Do	do	24	1,358	1,503	6.0)	5.6
Do	do	32	2,153	1,752	6.0)	
DD 4-21, 4-30, DDH	5-10	16	805	1,000	6.0)	
Do	do	24	1,487	993	6.4)	6.4
Do	do	32	1,835	834	6.7)	
DD 4-21, 4-30, 5-10, DDH	5-21	16	603	855	3.5)	
Do	do	24	1,407	335	4.1)	3.8
Do	do	32	1,163	621	3.7)	
DD 4-21, 4-30, 5-10, 5-21, DDH	5-31	16	632	507	2.3)	
Do	do	24	1,372	458	3.9)	3.4
Do	do	32	1,493	132	3.9)	
DD 4-21,4-30,5-10,5-21,5-31, DDH	6-11	16	438	1,730	1.4)	
Do	do	24	630	1,793	1.8)	2.0
Do	do	32	1,468	1,245	2.8)	
PDHPk 5-21	5-21	24	1,218	749	3.5	
PDHPk 5-31	5-31	24	1,662	580	3.5	
PDHPk 6-11	6-11	24	1,282	401	2.8	

Note. DD = Double disk; H = Harrow; P = Plow; D = Pack with disk; Pk = Pack with cultipacker.

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus)

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (Joe L. Sutherland) (October 31)

The weather for the past two weeks has been clear and fairly warm for this late in the season. The precipitation for this period was 0.14 of an inch on the 17th and came in the form of snow and melted rapidly. The total precipitation for the month of October was 1.03 inches, while the 20-year average for the month is 0.93 inch.

Minimum temperatures were 17 degrees on the 29th and 18 degrees on the 30th. Maximum temperature, 65 degrees on the 26th. Precipitation, 0.14 of an inch.

Visitors during the past week included W. L. Popham, State Leader of barberry eradication, and H. E. Morris, Extension Botanist of the Montana Experiment Station. They were interested in the diseased condition of the earlier seedings of winter wheat on the cereal project.

North Montana Substation, Havre (M. A. Bell) (November 5) (In cooperation with the Montana Agricultural Experiment Station.)

A dry-land spring-wheat nursery was grown at the North Montana Substation at Havre, from seed furnished by J. Allen Clark, Senior Agronomist in charge of Western Wheat Investigations, Office of Cereal Crops and Diseases. The varieties and hybrids were grown in 3-row blocks replicated three times. They are listed in the following table in order of their average yields. With moisture plentiful during the latter part of the season, and in the absence of plant diseases, high yields were obtained. It will be noted that Supreme was the highest yielding named variety, considerably outyielding Marquis, Reliance, Ceres, and also Mondak durum. However, 17 selections of the Marquis x Hard Federation cross outyielded Supreme. Many selections from this cross are outstanding in yield in comparison with their parents. Most of these strains have the combined advantages of both parents. They also are awnless or awnletted, which appears to have been an advantage in this experiment as none of the 30 highest yielding varieties or hybrid strains were awned.

Average yield in bushels per acre of 67 spring-wheat varieties and hybrids grown in 3 systematically replicated 3-row blocks at the North Montana Substation, Havre, Mont., in 1928

Variety or Cross	C.I. No.	Nursery No.	Yield
Marquis x Hard Federation	----	674	50.7
Do	----	393	49.2
Do	----	670	48.6
Do	----	736	48.2
Do	----	649	47.8
Do	----	421	47.8
Do	----	395	47.6
Do	----	676	47.3
Do	----	657	46.8
Do	----	399	46.7

(Continued)

Variety or Cross	C.I.No.	Nursery No.	Yield
Marquis x Hard Federation	----	377	46.1
Do	----	678	46.1
Do	----	666	46.1
Do	----	668	45.6
Do	----	671	45.2
Do	----	673	45.1
Do	----	663	45.0
Supreme	8026	---	44.9
Marquis x Hard Federation	----	398	44.7
Kanred x Marquis	----	41	44.4
Marquis x Hard Federation	----	651	44.2
Do	----	687	44.0
Do	----	381	44.0
Do	----	705	43.9
Do	----	710	43.9
Do	----	402	43.8
Do	----	734	43.8
Do	----	456	43.8
Do	----	427	43.6
Do	----	400	43.3
Do	----	378	42.8
Do	----	675	42.7
Do	----	727	42.5
Marquis x Kanred	----	409	42.5
Kanred x Marquis	----	11	42.1
Marquis x Hard Federation	----	453	41.7
Do	----	418	41.7
Do	----	709	41.5
Marquis check	3641	---	41.4
Marquis x Hard Federation	----	653	41.4
Do	----	656	41.3
Do	----	677	41.2
Do	----	661	41.1
Do	----	716	40.4
Kanred x Marquis	----	37	40.2
Marquis x Hard Federation	----	672	40.1
Marquis (average 3 checks)	----	----	40.0
Reliance Sel. 22	----	17	40.0
Reliance Sel. 64	----	22A	39.9
Reliance Sel. 16	----	14	39.8
Marquis check	3641	--	39.3
Do	3641	--	39.3
Kanred x Marquis	----	II-17-40	39.1
Kota x Marquis	----	1656.84	38.6
Ceres	6900	--	37.8
Reliance	7370	--	37.8
Marquis x Hard Federation	----	659	37.6
Kanred x Marquis	----	33	37.3
Kanred x Marquis	----	471	36.1
Hard Federation check	4733	---	34.6
Kanred x Marquis	----	28	34.5
Kota x Marquis	----	1656.81	33.7

(Continued)

Variety or Cross	C.I.No.	Nursery No.	Yield
Mondak	7237	---	33.1
Kota	5873	---	32.6
Kota x Marquis	-----	1656.125	32.4
Marquillo	6837	---	31.4
Hope	8178	---	31.1
Kota x Hard Federation	8197	285	29.6

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (November 1)

The weather in October was ideal for the rice harvest, and practically the entire crop is now threshed and stored. The yields per acre were considerably higher than expected. The Rice Growers' Association estimates that 3,500,000 sacks will be produced this year, whereas early estimates placed total production at 3,000,000 sacks.

We completed threshing the station rice on October 29. The yields were better than we expected them to be.

The rice market at present is quiet and prices are low.

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J.W.Baringer (October 31)

Very excellent weather during October made possible the completion of the first survey of 10 per cent of Ashtabula County for common barberries. Six agents of the U. S. Department of Agriculture and three inspectors of the Ohio Department of Agriculture constituted the field crew for the month. The leaves have dropped from the herbaceous plants and most of the leaves have fallen from the perennials which are common in woodlands. On account of the absence of excessive rains many swamps have been surveyed recently that ordinarily would be inaccessible at this time of the year. Fewer barberries are growing in the territory recently covered than in the townships surveyed earlier this year. All these circumstances have contributed to a comparatively speedy progress of survey.

One Federal agent and three State inspectors will continue survey in northeastern Ashtabula County in November as long as weather conditions will permit such operations.

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills [October 23]

Two four-men squads are now located in Galena and Warren, Jo Daviess County. It is hoped to keep these two squads of men in the field until about the middle of November if the weather will permit.

Conditions in the brushy, wooded areas of Jo Daviess County are almost ideal for scouting at the present time. One bush, which is being saved for observation, is holding its leaves almost perfectly, while the underbrush has lost nearly all its leaves. Wild blackberries and raspberries continue to hinder scouting, although visibility is very good.

Three single escaped bushes in timbers have rewarded the scouts during the past month.

IOWA

Iowa State College, Ames, P. W. Rohrbaugh (November 1)

The main field operations in Iowa ended on September 22. The field scouting for the summer covered very little territory but resulted in the finding of many bushes. Approximately 3½ townships were covered in Allamakee County and about 3 townships in Sac County. The area in Sac County took only about six weeks with two men working; the rest of the time was spent on the 3½ townships in Allamakee County, with 13 men working.

Two men who have been working since September 22 have spent their time entirely on check-up work, looking up the leads which have been sent in. They have destroyed 1,444 bushes found in 11 different counties, and have looked up only about one-half of the leads on file at the present time. This indicates something of the number of bushes scattered over Iowa. These men have not endeavored to do anything with the large areas of escaped bushes, but only the small areas which could be handled easily by two men. The larger areas still remain untouched.

Mr. Yount, our educational man, has been doing some very effective work in the counties in the northeastern corner of the State, adjacent to the area in which we expect to work next summer. He has visited County Agents, County Superintendents, and all of the high schools, teachers' meetings, and others to which he has been invited. He has been greeted with a very enthusiastic welcome in nearly all places, remarkably so in most of the parochial schools, of which there are quite a number in that part of the State.

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L. W. Melander

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 29

November 20, 1928
Personnel (Nov. 11-20) and Field Station (Nov. 1-15) Issue

PERSONNEL ITEMS

Dr. J. C. Arthur, emeritus professor of botany, Purdue University, La Fayette, Ind., was appointed collaborator without compensation, effective November 9, in connection with publications on plant rusts which were worked out but not completed under his appointment as agent which was terminated on March 31, 1928.

Dr. Carleton R. Ball, principal agronomist in charge, returned on November 13 from Manhattan, Kans., where he attended the Conference on Wheat Improvement Research in the Southern Great Plains held at the Kansas State Agricultural College, Manhattan, on November 8. Dr. Ball addressed the Conference on the Progress and Needs in the Improvement of Hard Red Winter Wheats by the U. S. Department of Agriculture.

Dr. A. M. Brunson, associate agronomist in the cooperative corn investigations at Manhattan, Kans., came to Washington on November 19 to remain for several weeks to confer with members of the Office with reference to the progress of cooperative corn experiments. He also will prepare manuscripts and reports.

M. T. Jenkins, associate agronomist in charge of cooperative corn investigations at Ames, Ia., came to Washington on November 20 to remain for several weeks. He will prepare reports and manuscripts and confer with members of the Office with reference to the progress of cooperative corn experiments.

Dr. C. E. Leighty, principal agronomist in charge of eastern wheat investigations, returned on November 14 from Manhattan, Kans., where he attended the Conference on Wheat Improvement Research in the Southern Great Plains.

M. A. McCall, principal agronomist in charge of cereal agronomy, returned on November 12 from Manhattan, Kans., where he was in attendance at the Conference on Wheat Improvement Research in the Southern Great Plains.

VISITORS

Estes P. Taylor, editor of Agricultural Leaders' Digest, The Blue Book of Agriculture, published by the American Farming Publishing Co., Chicago, Ill., was an Office visitor on November 13. Mr. Taylor also is editor of American Farming.

E. C. Johnson, Dean and Director of the Washington Agricultural Experiment Station, visited the Office on November 14 to discuss crop research.

Dr. Julius B. Weems, State Chemist in the Department of Agriculture of Virginia, visited the Office on November 16 with a party of friends. They are attending the meetings of the National Grange.

Director E. J. Iddings, of the Idaho Agricultural Experiment Station, was an Office visitor on November 17.

The following were visitors in the Office on November 19:

C. P. Blackwell and W. H. Sachs, agronomists of the National Fertilizer Association, at Shreveport, La., and Atlanta, Ga., respectively.

Director A. B. Conner of the Texas Agricultural Experiment Station.

Superintendent R. E. Dickson of the Spur (No. 7) Substation, Spur, Texas.

Dr. E. M. Freeman, Dean of the College of Agriculture, Forestry, and Home Economics, College of Agriculture and Agricultural Experiment Station, University of Minnesota.

R. E. Karper, in charge of small grain research and assistant director of the Texas Agricultural Experiment Station.

Dr. W. H. Tisdale, of the E. I. Du Pont de Nemours & Co., Inc., Wilmington, Delaware.

K. H. Townsend, associate plant quarantine inspector in connection with the Mexican fruit worm, U. S. Bureau of Entomology, with headquarters at Harlingen, Tex., was an Office visitor on November 20. Mr. Townsend was at one time a member of the Office of Cereal Crops and Diseases.

AMERICAN SOCIETY OF AGRONOMY

The Twenty-First Annual Meeting of the American Society of Agronomy will be held at the Willard Hotel, Washington, D. C., November 22 and 23, 1928.

On Friday, November 23, at the Open Session for Papers on Soils and Crops there will be read a paper entitled "Inheritance of Immunity from Black Stem Rust, Yield, and Protein Content, in Hope Wheat Crosses with Susceptible and Resistant Varieties," by J. Allen Clark and E. R. Ausemus.

John F. Trost, Associate Pathologist in the cereal-disease investigations conducted in cooperation with the Purdue University Agricultural Experiment Station, has been authorized to present a paper entitled "Studies on Iron Accumulations in the Nodal Tissues of Dent Corn Plants."

MANUSCRIPTS AND PUBLICATIONS

64 A manuscript entitled "Maize or Indian Corn," by Carleton R. Ball, was approved on November 6 for publication in Uncle Sam's History of the United States.

65 A manuscript entitled "Barley Varieties Registered, II," by H. V. Harlan, R. G. Wiggans, and L. H. Newman, was approved on November 12 for publication in the Journal of the American Society of Agronomy.

66 A manuscript entitled "The Occurrence of the Zonate Eyespot Fungus Helminthosporium giganteum on Some Additional Grasses," by Charles Drechsler, was submitted on November 14 for publication in the Journal of Agricultural Research.

The following 13 abstracts were approved on November 16 for publication in Phytopathology:

67 The Influence of Environment during Maturation upon Predisposition to Seedling Blight in Wheat and Corn Strains, by J. G. Dickson, P. E. Hoppe, J. R. Holbert, and George Janssen.

68 Progress Report on Cereal Scab Development during the Season of 1928, by J. G. Dickson, E. B. Mains, and Helen Johann.

69 Another Bacterial Leaf Spot of Sorghum, by Charlotte Elliott.

70 Studies of Certain Soil Phases of the Wheat Take-All Problem, by Hurley Fellows.

71 Some Chemical and Morphological Phenomena Attending Infection of the Wheat Plant by Ophiobolus graminis Sacc., by Hurley Fellows.

72 Studies of Cold Resistance in Corn, by J. R. Holbert and W. L. Burlison.

73 Inheritance of Resistance to Seedling Blight of Corn Caused by Gibberella saubinetii, by P. E. Hoppe.

74 Further Studies on Penicillium Injury to Corn, by Helen Johann.

75 Preliminary Report on a Bacterial Disease of Corn, by A. G. Johnson, Lillian Cash, and W. A. Gardner.

76 Experiments with Liquid and Dust Seed Disinfectants for Controlling Covered Smut of Barley and Stinking Smut of Wheat, 1926-1928, by R. W. Leukel.

77 Experiments on Stripe Disease of Barley and Its Control, by R. W. Leukel, J. G. Dickson, and A. G. Johnson.

78 Relative Susceptibility of Various Sorghum Varieties to Rust, Puccinia purpurea, by E. B. Mains.

79 The Rôle of Humidity in the Life Cycle, Distribution, and Control of the Loose Smut Fungus of Wheat, by V. F. Tapke.

Galley proof of the following four articles, for publication in the Journal of the American Society of Agronomy, was read on November 20:

Registration of Improved Wheat Varieties, III, by J. Allen Clark, J. H. Parker, and L. R. Waldron.

Barley Varieties Registered, II, by H. V. Harlan, R. G. Wiggans, and L. H. Newman.

Registration of Varieties and Strains of Oats, III, by T. R. Stanton, H. H. Love, and E. F. Gaines.

Inheritance in Nodak and Kahla Durum Wheat Crosses for Rust Resistance, Yield, and Quality at Dickinson, North Dakota, by J. Allen Clark and Ralph W. Smith.

The article entitled "Natural Crossing in Flax," by A. W. Henry and ChihTu, appears in the Journal of the American Society of Agronomy 20 (11): 1183-1192. November, 1928. (Cooperative investigations between the Minnesota Agricultural Experiment Station and the Office of Cereal Crops and Diseases and the Office of Fiber Plants, U. S. Dept. Agriculture.)

The article entitled "Plant Characters and Yield in Grain Sorghums," by John H. Martin, appears in the Journal of the American Society of Agronomy 20 (11): 1177-1182, fig. 1. November, 1928.

The paper entitled "The Merchant and Agriculture," by Carleton R. Ball, appears in the Official Year Book of the North Dakota Retail Merchants Association, pp. 39-55. 1928. (This paper was presented by Dr. C. R. Ball before the Twenty-Ninth Annual Convention of the North Dakota Retail Merchants Association held at Minot, N. Dak., June 5, 6, 7, 1928.)

An article entitled "Corn Improvement Work," by L. S. Mayer, appears in Tenn. Agr. Expt. Sta. Ann. Rpt. 40 (1927): 30-31. [1928] (Cooperation between Office of Cereal Crops and Diseases and the Tennessee Agricultural Experiment Station.)

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H.F.Stoneberg)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S. M. Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J.R.Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts E. B. Mains)

MICHIGAN

Agricultural Experiment Station, East Lansing (B. B. Robinson, Fiber Plant Investigations)

On November 13 Mr. Lyster H. Dewey, Botanist in Charge, Office of Fiber Plants, reported yields of seed flax varieties grown at East Lansing, Mich., in 1928. The tests were conducted in connection with plant breeding investigations of fiber flax under the direction of Mr. B. B. Robinson, cooperating with the State Station.

Acre yields of seed flax varieties grown in 3-row plots 25 feet long in 5 replications and at two rates of seeding at East Lansing, Mich., in 1928

Variety	C.I.No.	Yield (Bu. per acre) Seeding rate 34 Lbs.	40 Lbs.	Average
Redwing	180	18.0	17.8	17.9
Bison	378	17.1	14.7	15.9
Linota	244	14.1	16.3	15.2
N. D. R. 114	13	14.0	16.3	15.1
Winona	179	14.9	13.8	14.3

The three rows of each plot were 4 inches apart with 12 inches between plots. The acre yield is based on the yield of the middle row.

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (November 16)

So far in November there have been a killing freeze, a rain, and a bad wind storm. The rain may offset the damage done earlier by the severe wind. Wheat is not in very good condition because of its late start; most of the stands are satisfactory and may be all right as the result of the rainfall.

The grain-sorghum plots have been threshed. Within a few days cleaning of the grain will be done, and results will be available.

Minimum temperature, 26 degrees on November 2, 3, and 4; maximum, 71 degrees on November 10. Precipitation, 1.40 inches.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Agricultural Experiment Station, Manhattan (Agronomy Department)

On November 11, Ira K. Landon, in charge of Southeastern Kansas Experiment Fields, reported the following yields of flax in varietal and date-and-rate-of-seeding experiments:

Acre yields of flax varieties grown in triplicated 40th-acre plots on the Rest Experiment Field, Parsons, Kans., in 1928

Variety	C.I.No.	Yield (Bu. per acre) Series 1	Series 2	Series 3	Average
Bison	389	17.4	17.4	15.6	16.8
Linota	244	18.1	15.6	16.0	16.6
Local seed	---	17.0	15.3	14.9	15.7
Winona	179	15.3	15.6	16.0	15.6
N. D. R. 114	13	14.2	14.2	16.3	14.9
Redwing	180	14.9	15.3	14.2	14.8
Damont	3	11.4	15.3	13.1	13.3
Rio (L. 79)	280	12.1	11.4	10.3	11.2

Acre yields of Linota (C. I. No. 244) flax in date-and-rate-of-seeding experiment at Parsons, Kans., in 1928

Rate of seeding (pounds per acre)	Date of seeding Yield (Bu. per acre) March 8	March 27	April 9	April 18	Average for rate
20	16.4	17.2	16.8	13.6	16.0
30	17.2	17.6	20.4	17.6	18.2
40	16.8	20.4	19.6	19.2	19.0
50	18.8	19.6	21.2	20.0[a]	19.9
Average for date	17.3	18.7	19.5	17.6	

[a] Yield interpolated.

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague)

SOUTH DAKOTA

Field Station, Redfield (Samuel Garver) (Office of Forage Crops Investigations) (November 20, 1928)

The following yields were obtained from 16 varieties of spring wheat grown at the Redfield station in 1928. Marvel is a new variety being distributed by J. G. Overby, Mellette, S. Dak., who states its name is derived from Marquis and Velvet Chaff.

Yield data on 16 varieties of spring wheat grown in duplicate 1/25th acre plots at Redfield, S. Dak., in 1928

Class and Variety	C.I.No.	Yield (Bu. per acre)
Hard Red Spring		
Marvel[a/]	----	24.1
Ceres	6900	22.8
Reliance	7370	22.8
Marquis	3641	21.9
Preston	3081	19.9
Kota x Marquis 1656.84	8004	19.7
Progress	6902	18.2
Kota	6248	16.9
Ruby	----	15.9
Marquillo	6887	14.2
Durum		
Nodak	6519	26.4
Akrona	6881	25.7
Acme	5284	25.0
Kubanka	1440	24.5
Pierson	----	24.1
White		
Quality	----	9.8

[a/] Single plot only.

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (November 16

Calm, mild weather has prevailed during most of this month up to the present time. The precipitation has been only 0.08 of an inch in two showers and a trace of snow. The minimum temperature was zero on the 2nd and the maximum 67 degrees on Armistice Day. The ground is still unfrozen except that it freezes a little at night and usually thaws out in the daytime.

Seed of the various cereal varieties has been cleaned for winter storage. Some fall plowing is still being done in this vicinity, but the dry condition of the soil interferes somewhat with this work.

Supt. Leroy Moomaw left on November 11 for Washington, D. C., to be gone for a few weeks.

One division of the wheat-smut experiments conducted at the Dickinson Substation this year included a date-of-seeding test with 5 varieties of varying susceptibility sown on 7 different dates with seed inoculated with Tilletia laevis. The following table presents the percentages of smutted heads obtained from this experiment, 200 heads being examined in most cases. Soil moisture determinations and soil temperature studies were made during the period of germination for each date.

In another smut experiment smutted wheat heads from last year's crop were picked from the stubble in April after over-wintering out of doors. These were ground and the smut spores used to inoculate seed of Ulka No. 1 after treating the latter with formaldehyde to remove any other source of infection. The seed was then sown and counts of the heads produced showed 52 per cent to be affected with bunt (Tilletia laevis). This suggests the probability that under favorable conditions even in this climate wheat that is stubbled in, even after seed treatment, may produce a smutty crop if a sufficient number of smutted heads from the previous crop remain on the ground at seeding time.

Smut percentages obtained from a date-of-seeding test with 5 varieties of spring wheat sown on 7 different dates with seed inoculated with Tilletia laevis, at the Dickinson Substation in 1928

Date of seeding	Percentage of smutted heads of following varieties: Hope	Quality	Marquis	Kota	Ulka No.1
May 1	3.0	10.0	24.0	27.5	54.5
May 11	0.5	8.5	18.5	45.5	58.5
May 21	0.0	3.5	8.0	23.5	27.0
June 1	0.0	3.0	0.5	19.8	43.5
June 11	0.0	0.0	1.0	5.3	9.5
June 21	0.0	0.0	0.0	1.0	1.2
June 30	0.0	0.0	0.0	0.0	0.0

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E.R.Ausemus)

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (Joe L. Sutherland) (November 15)

The weather for the past two weeks has been open and there has been only a trace of precipitation. Minimum temperatures have ranged from 13 degrees on the 2nd to 42 degrees on the 10th. The maximum temperature was 64 degrees on the 13th.

The prolonged warm weather has been very favorable for another attack of wheat blight on the early sown fields of winter wheat. Early sown plots and fields in the vicinity of the station show this diseased condition very plainly. Diseased plants have been sent for study to Dr. Hurley Fellows, associate pathologist at Manhattan, Kans.

Karmont winter wheat was sown with the furrow drill, at four rates of seeding, on November 5.

North Montana Substation, Havre (M. A. Bell) (November 20, 1928)

The following yields were obtained from the 23 spring wheat varieties grown in three systematically replicated 1/50th acre plots in 1928.

Yield data for 23 varieties of spring wheat grown on fallow in triplicate 1/50 acre plots at Havre, Mont., in 1928

Variety and Class	C.I.No.	Yield (Bu. per acre)
Hard Red Spring:		
Supreme	8026	49.2
Reliance	7370	46.7
Kanred x Marquis	7372	45.8
Kitchener	4800	45.6
Renfrew	8194	43.3
Kota x Marquis 1656.84	----	43.1
Marquis	3641	42.8
Ceres	6900	42.5
University 222	----	42.2
Montana King	----	42.2
Power	3697	39.7
Kota	6248	39.2
Breeden	----	38.9
Garnet	8181	26.7
White:		
Baart	1697	50.0
Federation	4734	47.2
Hard Federation	4733	36.1
Quality	6607	31.7
Durum:		
Akrona	6881	48.1
Peliss	1584	46.1
Mondak	7287	44.2
Nodak	6519	43.9
Kubanka	1440	41.7

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J. W. Baringer

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R. M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills

IOWA

Iowa State College, Ames, P. W. Rohrbaugh

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L. W. Melander

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G.C.Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 30

November 30, 1928
Personnel (Nov. 21-30) and Project Issue

PERSONNEL ITEMS

Dr. Hurley Fellows, associate pathologist in charge of the cooperative investigations with wheat foot rots at Manhattan, Kans., will come to Washington early in December to prepare manuscripts and reports on cooperative research and to confer with Department officials.

M. T. Jenkins, associate agronomist in charge of cooperative corn investigations at Ames, Iowa, was granted the degree of Ph. D., by the Iowa Agricultural College in August, 1928.

C. O. Johnston, assistant pathologist in charge of leaf-rust investigations conducted in cooperation with the Kansas Agricultural Experiment Station, will come to Washington early in December to prepare manuscripts and reports on cooperative research and to confer with Department officials. En route to Washington Mr. Johnston will stop at La Fayette, Ind., to confer with officials of the Purdue University Agricultural Experiment Station.

VISITORS

The following were visitors in the Office since November 20:

Andrew Boss, Chief of the Division of Farm Management and Vice Director of the Minnesota Agricultural Experiment Station, St. Paul, Minn.

W. W. Burr, Dean and Director of the Nebraska College of Agriculture and Experiment Station.

L. E. Call, Dean of the Division of Agriculture and Director of the Experiment Station of the Kansas State Agricultural College.

P. V. Cardon, Director of the Utah Agricultural Experiment Station.

W. T. Craig, of the Department of Agronomy, Agricultural Experiment Station at Cornell University.

Dr. C. T. Dowell, Director of the Louisiana Agricultural Experiment Station.

Dr. F. D. Farrell, President of the Kansas State Agricultural College.

H. W. Hulbert, Professor of Agronomy, University of Idaho.

Dr. L. R. Jones, Professor of Plant Pathology in the University of Wisconsin.

Dr. E. D. Merrill, Dean and Director, College of Agriculture and Agricultural Experiment Station, University of California.

C. A. Mooers, Director of the Tennessee Agricultural Experiment Station.

H. J. Ninman, Agent and State Leader in Blister Rust Control, at Madison, Wis.

R. I. Throckmorton, Head of the Department of Agronomy, Agricultural Experiment Station, Kansas State Agricultural College.

J. F. Trost, Associate Pathologist, Purdue University Agricultural Experiment Station.

Dr. C. G. Woodbury, research department, National Canners' Association, Washington, D. C.

MANUSCRIPTS AND PUBLICATIONS

80 A brief manuscript entitled "Barley in Oats," by T. R. Stanton, was approved on November 21 for publication in a series of small circulars covering various phases of oat production by the National Crop Improvement Committee, of Chicago, Ill.

The article entitled "A Pythium Seedling Blight and Root Rot of Dent Corn," by Helen Johann, James R. Holbert, and James G. Dickson, appears in the Journal of Agricultural Research 37 (8): 443-474, pl. 1, figs. 1-9. October 15, 1928. (Cooperation between Office of Cereal Crops and Diseases and the Wisconsin Agricultural Experiment Station and Funk Bros. Seed Co., of Bloomington, Ill.)

The article entitled "Zonate Eyespot of Grasses Caused by Helminthosporium giganteum," by Charles Drechsler, appears in the Journal of Agricultural Research 37 (8): 473-492, pls. 1-3, figs. 1-3. October 15, 1928. (Informal cooperation between the Office of Cereal Crops and Diseases and the Office of Vegetable and Forage Diseases, Bureau of Plant Industry.)

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND AFFILIATED SOCIETIES, December 27, 1928, to January 2, 1929

A number of the members of the Office are planning to read papers before societies participating in the 85th annual meeting of the American Association for the Advancement of Science to be held in New York City, December 27, 1928, to January 2, 1929, inclusive.

Thirteen papers by members of the Office are to be presented before the meeting of the American Phytopathological Society. Abstracts of these papers were listed in the Cereal Courier 20 (29): 366-367. November 20, 1928. In addition to these, Dr. A. M. Hurd-Karrer, associate physiologist in cereal physiology investigations, will read a paper entitled "A Correlation between Hydrogen-ion Concentration and Varietal Adaptation of Wheat to Different Temperatures," before the Physiological Section of the Botanical Society of America, and another paper entitled "The Relation between the Acidity and Moisture Content of Wheat Plants Grown at Different Temperatures," before the American Society of Plant Physiologists.

AMERICAN SOCIETY OF AGRONOMY

Officers, 1928-1929

President. Dean and Dir. Marion J. Funchess, Alabama College of Agriculture and Experiment Station. (Elected in 1928 for one year.)

1st Vice Pres. Dr. Selman A. Waksman, Microbiologist of the New Jersey College of Agriculture and Experiment Stations. (Elected in 1928 for one year, to succeed Vice President Funchess.)

2nd Vice Pres. Dean and Dir. William W. Burr, Nebraska College of Agriculture and Experiment Station. (Elected in 1926 for four years.)

3rd Vice Pres. Dr. Arthur B. Beaumont, Head of the Department of Agronomy, Massachusetts Agricultural College and Experiment Station. (Elected in 1927 for four years.)

4th Vice Pres. Prof. Clyde McKee, Vice Dean and Agronomist, Montana State College and Experiment Station. (Elected in 1928 for four years.)

Secretary-Treasurer. Dr. Percy E. Brown, Professor of Soils and Chief Soil Chemist and Bacteriologist, Iowa State College and Experiment Station. (Reelected in 1928 for one year.)

Editor. Prof. James D. Luckett, Editor, New York State Experiment Station. (Reelected in 1928 for one year.)

The following five members were made Fellows of the American Society of Agronomy at the meetings held in Washington November 22 and 23, 1928.

Dr. Curtis F. Marbut, Principal Soil Scientist in Charge of Soil Survey, Soil Investigations, Bureau of Chemistry and Soils.

Dr. Oswald Schreiner, Principal Biochemist in Charge of Soil Fertility, Soil Investigations, Bureau of Chemistry and Soils.

Dr. Adrian J. Pieters, Senior Agronomist, Clovers and Clover-like Legumes, Green Manure, and Cover Crops, Office of Forage Crops, Bureau of Plant Industry.

George Roberts, Head of Department of Agronomy and Assistant Dean of College of Agriculture, University of Kentucky.

A. T. Wiancko, Head of Department of Agronomy, Professor and Chief in Agronomy, Purdue University.

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 31

December 15, 1928
Personnel (Dec. 1-15) and Field Station (Nov. 16-30) Issue

PERSONNEL ITEMS

Boyd C. Frye was appointed Assistant Scientific Aid, effective December 1, to assist Dr. J. R. Holbert, agronomist in charge of the cereal-disease investigations conducted in cooperation with Funk Bros. Seed Company, Bloomington, Ill.

L. D. Hutton, associate pathologist in charge of barberry eradication, returned on December 6 from Chicago, Ill. Together with the State Leaders of barberry eradication, who were in attendance at the barberry demonstrations at the International Grain and Hay Show in Chicago, Mr. Hutton studied the effectiveness of such demonstrations and made plans for improving future demonstrations.

Mr. Hutton also conferred with State and college officials who were attending the International Grain and Hay Show, regarding the progress of the barberry campaign, particularly with a view to improving the educational activities.

Jenkin W. Jones, superintendent of the Biggs Rice Field Station, Biggs, Calif., will come to Washington shortly after the middle of the month to confer with members of the Office staff and to prepare reports and manuscripts on investigations conducted at Biggs. Mr. Jones will remain in Washington about two months.

Hickman C. Murphy, agent in the cereal-rust investigations conducted in cooperation with the Iowa Agricultural Experiment Station, Ames, Ia., came to Washington on December 12 to confer with members of the Office staff and to prepare his annual report of progress and write manuscripts covering cooperative research now in progress. Mr. Murphy will remain in Washington about four weeks.

Dr. E. C. Stakman, agent in the cooperative cereal-disease investigations conducted at University Farm, St. Paul, Minn., came to Washington on December 6 to confer with members of the Office staff and to prepare reports and manuscripts on cooperative research. Dr. Stakman will remain in Washington until the end of the month.

VISITORS

S. H. Essary, botanist at the Tennessee Agricultural Experiment Station, Knoxville, Tenn., was an Office visitor on December 6.

Dr. George M. Rommel, who made a survey of and an extensive report on the commercial utilization of waste farm products for the Office of the Secretary last year, and whose book (printed on cornstalk paper) embodying most of these data, has recently appeared, was an Office visitor on December 15.

Dr. Rommel has just accepted an appointment as Industrial Commissioner at Savannah, Ga. His mission there will be to promote Savannah as an industrial center.

MANUSCRIPTS AND PUBLICATIONS

81 A manuscript entitled "The Influence of Varietal Resistance, Sap Acidity, and Certain Environmental Factors on the Occurrence of Loose Smut in Wheat," by V. F. Tapke, was submitted on December 4 for publication in the Journal of Agricultural Research.

82 An abstract of a paper entitled "Embryogeny and Endosperm Formation in Maize," by L. F. Randolph, was approved on December 4 for publication in the American Journal of Botany.

83 An abstract of a paper entitled "Types of Supernumerary Chromosomes in Maize," by L. F. Randolph, was approved on December 4 for publication in the American Journal of Botany.

84 An article entitled "Interpreting Correlation Coefficients," by F. D. Richey, was approved on December 6 for publication in the Journal of the American Society of Agronomy.

Galley proof of Circular No. 43 entitled "Distribution of the Classes and Varieties of Wheat in the United States," by J. Allen Clark, John H. Martin, Karl S. Quisenberry, John R. Hooker, C. E. Leighty, was read on December 4.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND AFFILIATED SOCIETIES

December 27, 1928, to January 2, 1929.

Authority has been granted to the following members of the Office to attend, without expense to the Department except for salary, the annual meetings of the American Association for the Advancement of Science, to be held in New York City from December 27, 1928, to January 2, 1929.

Washington Employees

Dr. C. R. Ball
Dr. Charlotte Elliott
Dr. H. B. Humphrey
Dr. A. M. Hurd-Karrer
Dr. C. E. Leighty
M. A. McCall
F. D. Richey
Mrs. Marion Griffiths-Zehner

Field Employees

Dr. A. M. Brunson
Ralph M. Caldwell
Dr. J. G. Dickson
Dr. Hurley Fellows
Dr. J. R. Holbert
Dr. M. T. Jenkins
C. O. Johnston
J. W. Jones
R. W. Leukel
Dr. M. N. Levine
Dr. E. B. Mains
H. C. Murphy
Dr. L. F. Randolph
Dr. J. D. Sayre
Dr. L. J. Stadler
Dr. E. C. Stakman
Dr. V. F. Tapke

The following papers by members of the Office staff will be presented at the meeting of The American Phytopathological Society:

The Influence of Environment during Maturation upon Predisposition to Seedling Blight in Wheat and Corn Strains, by J. G. Dickson, P. E. Hoppe, J. R. Holbert, and George Janssen.

Progress Report on Cereal Scab Development during the Season of 1928, by J. G. Dickson, E. B. Mains, and Helen Johann.

Another Bacterial Leaf Spot of Sorghum, by Charlotte Elliott.

Studies of Certain Soil Phases of the Wheat Take-All Problem, by Hurley Fellows.

Some Chemical and Morphological Phenomena Attending Infection of the Wheat Plant by Ophiobolus graminis Sacc., by Hurley Fellows.

Studies of Cold Resistance in Corn, by J. R. Holbert and W. L. Burlison.

Inheritance of Resistance to Seedling Blight of Corn Caused by Gibberella saubinetii, by P. E. Hoppe.

Further Studies on Penicillium Injury to Corn, by Helen Johann.

Preliminary Report on a Bacterial Disease of Corn, by A. G. Johnson, Lillian Cash, and W. A. Gardner.

Experiments with Liquid and Dust Seed Disinfectants for Controlling Covered Smut of Barley and Stinking Smut of Wheat, 1926-1928, by R. W. Leukel.

Experiments on Stripe Disease of Barley and Its Control, by R. W. Leukel, J. G. Dickson, and A. G. Johnson.

Relative Susceptibility of Various Sorghum Varieties to Rust, Puccinia purpurea, by E. B. Mains.

The Rôle of Humidity in the Life Cycle, Distribution, and Control of the Loose Smut Fungus of Wheat," by V. F. Tapke.

Dr. A. G. Johnson, principal pathologist in charge of cereal-disease investigations, has been authorized to attend the meetings at Department expense. He will present not only the paper before the American Phytopathological Society, but will read a paper entitled "Possible Incorporation of Disease Diagnoses in Cereal Analysis Reports" before the Association of Official Seed Analysts of North America, also affiliated with the American Association for the Advancement of Science.

Dr. A. M. Hurd-Karrer, associate physiologist in cereal physiology investigations, will read a paper entitled "A Correlation between Hydrogen-ion Concentration and Varietal Adaptation of Wheat to Different Temperatures" before the Physiological Section of the Botanical Society of America, and another paper entitled "The Relation between the Acidity and Moisture Content of Wheat Plants Grown at Different Temperatures" before the American Society of Plant Physiologists.

Dr. L. F. Randolph, associate cytologist in cytological and morphological studies of corn, in cooperation with Cornell University, will present a paper entitled "Types of Supernumerary Chromosomes in Maize" before the joint Genetic Sections of the Botanical Society of America and the American Society of Zoologists, and another paper entitled "Embryogeny and Endosperm Formation in Maize" before the Botanical Society of America.

FIELD STATION CONDITION AND PROGRESS

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW JERSEY

Agricultural Experiment Station, New Brunswick (Flax Breeding, H. B. Sprague)

On September 21, Dr. Howard B. Sprague, agronomist, Agricultural Experiment Station, New Brunswick, N. J., reported yields of 14 varieties of seed flax grown at that place in 3-row plots 17 feet long in 1928. A severe storm caused considerable lodging of some varieties. It will be seen from the following table that acre yields are more or less inversely correlated with percentage of lodging.

Acre yields of seed-flax varieties grown in single 3-row plots 17 feet long at the Agricultural Experiment Station, New Brunswick, N. J., in 1928. [Listed in order of seeding. Date of seeding, April 14.]

Plot	Variety	C.I. No.	Date of Ripening	Height Inches	Lodging Per cent	Yield (Bu. per acre)
1	N.D.R. 714	399	7-22	31	50	7.53
2	Long 66	337	7-26	29	40	8.41
3	Long 71	271	7-22	30	50	9.78
4	Buda	326	7-25	32	75	4.71
5	Bison	389	7-25	29	60	7.67
6	Linota	397	7-22	32	75	10.19
7	N.D.R. 114	403	7-22	33	70	8.00
8	Minn. 281	408	7-22	31	70	3.87
9	N.D.R. 726	412	7-25	33	75	3.63
10	Redwing	394	7-20	31	40	12.91
11	N.D. Nur. 1739	341	7-26	33	70	5.45
12	Rio (Long 79)	280	7-26	25	75	5.28
13	N.D. Nur. 1737	339	7-23	26	25	11.03
14	N.D. Nur. 1740	342	7-22	24	15	14.83

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H.F.Stoneber

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L.J.Stadler)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L.S.Mayer)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, S.M.Dietz)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, La Fayette (Corn Rots and Metallic Poisoning, G. N. Hoffer)

Purdue University Agricultural Experiment Station, La Fayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, K. S. Quisenberry, Acting in Charge)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (December 4)

Except for a snow the weather of the last half of November was typical for this period of the year.

The grain of the sorghum varietal plots was cleaned, and the figured yields are presented in the following table:

Yield data on 25 varieties of grain sorghums grown in duplicate 2/45th-acre plots on three dates at Woodward, Okla., in 1928

Variety	C.I.No.	Yield (Bushels per acre) Dates Seeded May 26	June 9	June 24	Average of 3 dates
Beaver milo	871	12.9	24.1	28.8	21.9
Double Dwarf milo	868	13.5	22.9	25.7	20.7
Dwarf milo	332	16.9	26.9	26.1	23.3
Fargo milo	809	20.1	26.7	25.1	24.0
Spur feterita	623	19.7	26.3	23.5	23.2
Feterita	182	22.5	24.9	22.3	23.2
Dwarf feterita	182-D	20.3	22.3	18.9	20.5
Hybrid feterita (No. 6)	---	17.3	21.3	19.9	19.5
Dwarf hegari	620	16.9	14.5	15.9	15.7
Do	750	16.9	16.3	19.3	17.5
Chiltex	874	22.1	31.9	27.7	27.3
Premo	873	21.5	29.7	23.7	25.0
Kaferita (feterita seeded)	812	21.3	30.7	27.5	26.5
Do (kafir seeded)	811	19.5	31.1	29.7	26.8
Wonder kafir	872	19.9	30.9	29.5	26.8
Early red kafir	866	19.3	28.1	33.6	27.0
Pink kafir	432	17.1	26.5	27.9	23.8
Dawn kafir	340	18.1	27.1	27.7	24.3
Sunrise kafir	472	18.3	26.3	24.9	23.2
Reed kafir	628	20.7	30.5	33.0	28.1
Sharon kafir	813	18.1	27.9	32.6	26.2
Texas Blackhull kafir	865	18.5	28.1	31.7	26.1
Standard kafir	71	13.3	21.2	29.7	21.4
Bishop kafir	814	18.1	27.1	30.3	25.2
Darso	615	15.2	28.5	36.4	26.7

All figured at 56 pounds to the bushel.

Winter wheat has emerged with good stands, but because of late seeding it is not very tall nor does it cover the ground as usual.

Minimum temperature for last half of November, 23 degrees on the 19th; maximum, 65 degrees on the 23rd. Precipitation, 2.38 inches, or a total of 3.78 for November, which is well above average.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J.H.Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C.O.Johnston)

Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, G. F. Sprague)

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)

(December 1)

The ground remained bare throughout the month of November, only a few snowflakes being visible during the month. The total precipitation for the month was but 0.08 of an inch. A light snow began falling this afternoon, but there is a prospect of clearing weather soon.

The dry weather that has prevailed during most of the fall has been a great help to farmers in threshing and marketing the unusually heavy crop of grain produced. A considerable amount of wheat passes the Substation daily on the way to local elevators.

Less than the usual amount of fall plowing has been done in this district due to the dry condition of the soil.

Seed of increase fields of cereal grains at the Substation is being cleaned and stored for winter.

Progress is being made in preparing the annual report of cereal experiments at the Substation.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (December 1)

We have had remarkably clear, mild weather during most of November. Total precipitation for the entire month was only 0.06 of an inch. Maximum temperature, 64 degrees on November 10; minimum, 30 degrees on November 24.

Conditions were very favorable for observing and estimating the loss of bolls and seed from flax still standing. The standing flax shows little apparent loss except over small areas where rabbits have broken off heads of entire plants. The relative difference in yield of flax harvested October 16 and November 20, and counts of bolls on the ground, indicate a probable loss of 10 per cent and possibly as high as 25 per cent for that period.

The percentage of rust infection and the yields in the triplicated triple-row nursery on flax-sick soil are presented in the following table:

Yield and percentage of rust infection of 35 flax varieties and selections grown in triplicated triple 17-foot rows on flax-sick soil, Mandan, N. Dak., 1928

Variety	C.I.No.	Rust (Per cent)	Yield (Bu. per acre 1928	3-yr.av.,1926-8
Hybrid 167 x 179	---	0	14.6	12.0
Selection 167-254	---	0	14.4	11.7
Hybrid 19 x 112	---	0	14.1	----
Hybrid 19 x 112	---	T	14.1	11.8
Rio (Long No. 79)	380	0	13.9	10.7
Long No. 71	271	0	13.2	11.0
Selection . .	119	0	12.7	10.9
Selection ..	161	T	12.7	10.6
Selection . ..	112	0	12.3	11.4
Siberia No. 206	---	8	12.2	11.3
Selection C. .. 161	161	T	12.2	----
Hybrid 19 x 112	383	0	12.1	10.4
Selection 8-17	---	13	11.9	9.7
Selection	161	T	11.8	---
Hybrid 19 x 112	---	0	11.7	10.1
Buda, N. D. R. 119	---	10	11.7	10.3
Selection 104-4	---	T	11.4	----
Chippewa	---	12	11.3	----
Hybrid 19 x 112	385	0	11.2	11.3
Selection 8-21	---	12	10.5	10.3
Slope	274	18	10.4	9.6
Hybrid 19 x 112	---	0	10.4	---
Bison	389	3	10.3	---
Selection 8-34	---	12	9.7	9.2
N. D. 40013	241	10	9.6	9.1
Selection	326	7	9.6	---
N. D. R. 52	275	17	9.1	8.3
Linota Selection	---	13	9.0	8.9
N. D. R. 114	13	28	8.9	8.0
Linota Selection	---	15	8.8	---
Linota	244	15	8.7	8.9
Redwing	---	18	8.7	8.2
Winona	179	20	7.5	7.9
Winona Selection 179-1	---	33	6.4	7.9
Winona Selection 179-9	---	25	6.1	8.0

Northern Great Plains Field Station, Mandan (Cereal Agronomy, E. R. Ausemus) (December 15)

The yield in bushels per acre, together with percentage of protein, protein in pounds per acre, and percentage of stem-rust infection of the spring-wheat varieties grown in the nursery at Mandan, N. D., are presented in the following table. Mindum was the highest yielding durum variety. The leading strains of the common wheats were selections of the Kanred x Marquis cross, the named variety Reliance, producing the highest yield. Stem rust was not a factor affecting yields this year. The early maturing varieties evidently were reduced in yield as a result of insufficient moisture during the first part of the growing season. Hope had a very good yield and was high in percentage of protein. A selection of Kota x Webster H-89-25 produced the highest total number of pounds of protein per acre.

Percentage of stem-rust infection, crude-protein content, pounds of protein per acre, and yield in bushels per acre of the spring wheat varieties grown in triple rod rows, replicated three times at the Northern Great Plains Field Station, Mandan, N. Dak., in 1928

Variety or Hybrid	Nursery No.	C.I. No.	Stem Rust (Per Cent)	Protein (Per cent)	Protein (lbs. per acre)	Yield (Bu. per acre)
DURUMS						
Mindum	----	5296	T	13.4	265	33.0
Akrona	----	6881	0	12.9	222	28.7
Kubanka No. 8 x Pentad	1053	----	T	13.8	234	28.3
Mindum x Pentad	881	----	0	13.7	228	27.7
Mondak	----	7287	T	12.6	209	27.6
Kubanka No. 132	----	8383	0	12.5	200	26.6
Nodak	----	6519	T	13.5	214	26.4
Kubanka No. 8 x Pentad	1054	----	0	14.6	212	24.2
Kubanka	----	1440	0	12.8	179	23.3
Kubanka No. 8 x Pentad	----	8386	3	14.5	189	21.7
Pentad	----	3322	0	13.8	166	20.1
COMMON						
Reliance	----	7370	23	12.4	231	31.1
Reliance Selection No. 7	13	----	25	12.5	232	30.9
Marquis x Kota	1656.48	----	2	13.1	233	29.7
Reliance Selection No. 16	14	----	37	12.6	222	29.4
Do No. 63	21	----	30	12.4	218	29.3
Do No. 22	17	----	40	12.8	224	29.2
Hope	----	8178	0	13.4	224	27.9
Kota x Webster	H-89	----	0	14.9	248	27.7
Marquis x Kota	----	8184	2	14.2	233	27.4
Marquis x Kota	1656.6	----	T	14.8	242	27.3
Reliance Selection No. 23	18	----	33	12.8	208	27.1
Kanred x Marquis	33	----	37	12.2	198	27.0
Do	37	----	33	12.1	195	26.9
Marquis x Kota	1055	----	T	14.0	226	26.9
Kanred x Marquis	----	8018	23	13.4	212	26.4
Kota x Webster	H-81	----	0	15.6	245	26.2
Reliance Sel. No. 64	22	----	30	13.0	203	26.0
Kanred x Marquis	41	----	37	11.6	174	25.0

Variety or Hybrid	Nursery No.	C.I. No.	Stem Rust (per cent)	Protein (per cent)	Protein (lbs. per acre)	Yield (Bu. per A.)
COMMON (Continued)						
Marquis x Kota	----	8006	T	15.1	227	25.0
Marquis x Emmer	H-44	----	0	14.6	216	24.7
Kanred x Marquis	11	----	37	12.1	177	24.4
Supreme	----	8026	10	12.4	180	24.2
Ceres	----	6900	5	13.3	192	24.1
Marquis x Kota	1656.44	----	2	14.3	207	24.1
Kota-Hd.Fed. x Kanred x Marquis	1064	----	T	13.1	184	23.4
Kota x Webster	H-151	----	T	14.2	199	23.3
Marquis x Kota	1056	----	1	13.9	191	22.9
Do	----	6898	2	13.9	189	22.7
Do	----	8385	T	14.3	190	22.1
Preston	----	3081	43	13.3	175	21.9
Marquis x Kota	----	8004	T	13.1	171	21.8
Kanred x Marquis	32	----	40	13.1	171	21.7
Kota-Hd.Fed. x Kanred-Marquis	1068	-----	3	12.4	161	21.6
Kanred x Marquis	----	8019	47	11.8	152	21.4
Kota-Hd.Fed. x Kanred-Marquis	1059	----	2	11.7	146	20.8
Do Do	1066	----	13	12.4	155	20.8
Marquis (Canadian)	----	----	23	13.2	164	20.7
Kanred x Marquis	471	----	37	12.5	154	20.5
Red Bobs	----	6255	13	12.7	155	20.3
Kota-Hd.Fed. x Kanred-Marquis	1060	----	1	12.2	148	20.2
Marquis x Kota	----	8185	T	14.3	171	19.9
Kota x Webster	H-209	----	0	12.8	153	19.9
Marquis x Kota	----	8005	T	13.7	163	19.8
Kota-Hd.Fed. x Kanred-Marquis	355	----	4	12.7	150	19.7
Kota	----	5878	4	14.1	163	19.3
Marquis (Average 3 checks)	----	3641	23	13.2	153	19.3
Kota-Hd.Fed. x Kanred-Marquis	356	----	2	12.6	145	19.2
Do Do	1063	----	4	12.3	141	19.1
Marquillo	----	6887	2	13.6	153	18.7
Kota-Hd.Fed. x Kanred-Marquis	1069	----	5	13.6	150	18.4
Do Do	1062	----	2	13.1	144	18.3
Do Do	1057	----	6	12.5	136	18.1
Do Do	1058	----	40	14.9	156	17.5
Power	----	3697	43	13.4	140	17.4
Kota x Kanred	620	----	4	12.9	133	17.2
Kota-Hd.Fed. x Kanred-Marquis	1061	----	1	12.3	125	16.9
Kota x Webster	H-178	----	0	13.5	136	16.8
Progress	----	6902	23	14.8	147	16.6
Garnet	----	8181	8	12.7	123	16.1
Kota-Hd.Fed. x Kanred-Marquis	1065	----	2	13.6	129	15.8
Do Do	1067	----	23	12.8	119	15.5
Reward	----	8182	30	13.9	129	15.5
Kota-Hd.Fed. x Kanred-Marquis	625	----	13	12.5	116	15.4
Kota x Hard Federation	285	----	1	13.2	109	13.7
Marquis x Erivan	238	----	T	14.7	115	13.0
Quality	---	6607	20	12.7	98	12.8
Ruby	---	6047	2	14.9	96	10.7
Hard Federation	---	4733	10	13.1	83	10.5

MONTANA

Judith Basin Substation, Moccasin (Cereal Agronomy, B. B. Bayles) (Joe L. Sutherland) (December 8)

The yields of 19 varieties of winter wheat grown at the Judith Basin Branch Station in 1928, in four systematically replicated 1/50-acre plots are presented in the following table. The extremely low yields resulted from the combined effect of winterkilling and an epidemic of Helminthosporium. Karmont, the standard winterhardy variety for this section, was one of the lowest yielding and the less winterhardy Kanred yielded in the intermediate group. This would seem to indicate that other conditions had a greater influence on the final yield than did winterkilling. It is interesting to note that the four new hybrids ranked high in yield. The ranking [b] places the varieties in order when the yields of plots in series 3 and 4 (comparable with those of the four hybrids) are averaged.

The yields of 32 varieties of spring wheat are presented in the following table. These varieties were grown in 1/50-acre plots replicated four times, with the exceptions noted. The past season was above average for the production of spring wheat. Of the high yielding varieties grown in this test many are selections and new hybrids.

Yields of winter-wheat varieties grown in 1/50-acre plots, replicated four times, at the Judith Basin Substation, Moccasin, Mont., in 1928

Variety	C.I.No.	Rank[b]	1928
Minturki x Bel-Buffum	8033	1	18.6[a]
Kanred x Minhardi	8040	2	13.3[a]
Eureka x Minhardi	8036	3	11.9[a]
Turkey	6250	4	7.9
Kanred x Minessa	8045	5	7.1[a]
Minard	6690	7	6.7
Beloglina	1543	8	6.6
Turkey	6152	6	6.5
Oro	8220	10	4.9
Beloglina	1667	9	4.1
Newturk	6935	11	3.6
Turkey	1558	14	3.1
Kharkof	6686	13	2.9
Kanred	5146	14	2.7
Regal	7364	18	2.6
Turkey	6249	15	2.2
Kharkof	1583	12	1.8
Karmont	6700	16	1.6
Montana No. 36	5549	17	1.3

[a] Grown in two series only

[b] Rank of varieties when yields comparable with those of the new hybrids, 8033, 8036, 8040, and 8045, are used.

Yields of spring-wheat varieties grown in 1/50-acre plots, replicated four times, at the Judith Basin Substation, Moccasin, Mont., in 1928

Variety	C.I.No.	Nursery No.	Yield 1928
Hard Red Spring			
Kanred x Marquis	----	41	42.9
Kanred x Marquis	----	37	42.8
Red Bobs Sel. 6255-25	----	--	42.4
Ceres	6900	--	42.3
Red Bobs Sel. 6255-32	----	--	42.2
Supreme	8026	--	41.7
Kota x Marquis 1656-84	8004	--	40.7
Marquis 10B	----	--	40.3
Reliance	7370	--	40.0
Kanred x Marquis	----	22A	40.0
Kanred x Marquis	----	11	39.0
Marquis	3641	--	38.8
Kitchener	4800	--	38.8
Kanred x Marquis	----	--	38.0
Red Bobs	6255	--	37.8
Marquis x Hard Federation	----	402	37.7
Kota	6248	--	35.3
Garnet	8181	--	34.2
Power	3697	--	32.3
Hope	8178	--	31.9
Ruby	6047	--	29.2
Reliance (pure for form 17 rust)	---	--	36.3[a]
Marquis x Hard Federation	----	378	28.2[a]
Durums			
Nodak	6519	---	36.8
Peliss Selection 1584-14	----	---	35.7
Mondak	7287	---	35.1
Peliss	1584	---	34.1
Kubanka	1440	---	33.8
White Wheats			
Baart	1697	---	43.7
Federation	4734	---	39.5
Hard Federation	4733	---	34.5
Quality	6607	---	30.3

[a] Grown in a single plot.

Montana Agricultural Experiment Station, Bozeman (Le Roy Powers) (December 8)

A dry-land and an irrigated spring-wheat nursery was grown at the Montana Agricultural Experiment Station at Bozeman from seed furnished by J. Allen Clark, senior agronomist in charge of western wheat investigations, Office of Cereal Crops and Diseases. The nurseries comprised 1,460 rows.

In the following table are presented the data on stand and yield of miscellaneous varieties and hybrid strains grown in 3-row blocks replicated three times. Due to the dry spring the nursery emerged with poor stands. This affected the yields of some varieties. Reliance and selections from it produced the higher yields. Supreme outyielded the average of the Marquis checks,- Hope and Ceres.

Average stand and yield of 34 spring-wheat varieties and hybrids grown in 3 systematicly replicated 3-row blocks at the Montana Agricultural Experiment Station, Bozeman, Mont., in 1928

Variety or Cross	C.I.No.	Nursery No.	Stand (per cent)	Yield (Bu.per A.
Reliance	7370	---	80	50.7
Reliance Sel. 16	----	14	92	50.2
Mondak	7287	---	80	49.9
Reliance Sel. 64	----	22A	82	47.6
Kanred x Marquis	----	II-17-40	82	46.3
Do	----	11	75	46.3
Kota	5878	---	93	44.9
Kanred x Marquis	----	471	87	44.4
Marquis x Hard Federation	----	677	88	43.4
Reliance Sel. 22	----	17	83	42.7
Marquis (check)	3641	---	85	41.5
Marquis x Hard Federation	----	680	87	41.5
Do	----	381	73	41.3
Supreme	8026	---	87	41.2
Kanred x Marquis	----	33	75	41.2
Marquis x Hard Federation	----	377	80	41.1
Do	----	678	80	41.0
Kanred x Marquis	----	37	77	39.9
Marquis x Hard Federation	----	395	80	39.8
Marquis (check)	3641	---	88	39.7
Hope	8178	---	80	37.9
Kanred x Marquis	----	28	83	37.4
Marquis x Hard Federation	----	663	83	37.1
Do	----	678	82	35.9
Kanred x Marquis	----	41	82	35.8
Marquis x Hard Federation	----	378	72	35.7
Ceres	6900	---	67	34.0
Kota x Marquis	----	1656.84	73	33.5
Kota x Hard Federation	----	285	88	33.2
Kota x Marquis	----	1656.81	67	33.2
Marquillo	6887	---	78	32.8
Marquis x Hard Federation	----	447	73	30.5
Do	----	399	68	30.2
Kota x Marquis	----	1656.125	88	29.9

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Moscow (Stripe Rust, C.W.Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (Dec. 1)

Practically the entire California rice crop was threshed and under cover before the rainy season began this fall. There was a heavy rainfall on November 2, and another rainy period about the middle of the month. The total rainfall for November was 3.77 inches, or about 1 inch above normal. The precipitation early in November started pasture growth, but the weather since then has been almost too cold for rapid development.

It is estimated that the average acre yield of rice in California this year was 2,750 pounds on 136,000 acres. This is about 500 pounds per acre more than was expected early in the fall. The crop this year is of good quality.

The rice market is stronger than it was at harvest time, but the price of rough rice is still quite low.

Dr. M. Kondo, Director of the Ohara Institute for Agricultural Research, was a Station visitor on November 13.

University Farm, Davis (Cereal Agronomy, V. H. Florell)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs) (December 5)

The cereal-smut nursery, which contains about 6,000 rod rows, was seeded at Davis last week. The weather was ideal for seeding. A light rain fell on Sunday, December 2, which should result in very satisfactory conditions for germination and emergence of the seedlings.

BARBERRY ERADICATION PROGRESS

OHIO

Ohio State University, College of Agriculture, Columbus, J.W.Baringer

INDIANA

Purdue University College of Agriculture, La Fayette, W. E. Leer

MICHIGAN

Agricultural College, East Lansing, W. F. Reddy

WISCONSIN

Department of Agriculture, State Capitol Annex, Madison, R.M. Caldwell

ILLINOIS

Box 72, Post Office Building, Urbana, R. W. Bills

IOWA

Iowa State College, Ames, P. W. Rohrbaugh (November 26)

The last of the field operations in barberry eradication for the season was terminated on the 22nd of November. The two boys who have been checking up on barberry leads since September 22 have salted about 3,400 bushes in the 61 days that they have worked. More than 35,000 pounds of salt were used on these bushes, which were distributed well over the State.

Mr. Yount's educational activities in the schools was terminated on November 24. In the present week he will be working on a course of study for the grade schools and high schools, in cooperation with the Farm Crops Section of Iowa State College. This study course is to be used by the State Department of Education, and material relative to the study of barberry eradication is being embodied in the course. Much time is being given to the educational campaign this year, and the schools seem to be glad to get our material. We are receiving some fine cooperation from the State Department of Education.

We have had a very nice autumn in Iowa this year, interrupted only by a couple of weeks of rainy weather and two light snows. Winter wheat looks well in the sections of Iowa which the State Leader has had opportunity to visit.

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul, L.W.Melander

NEBRASKA

College of Agriculture, University Farm, Lincoln, A. F. Thiel

SOUTH DAKOTA

College of Agriculture, Brookings, R. O. Bulger

NORTH DAKOTA

Agricultural Experiment Station, State College Station, Fargo, G. C. Mayoue

MONTANA

State College of Agriculture, Bozeman, W. L. Popham

WYOMING

College of Agriculture, University of Wyoming, Laramie, E. A. Lungren

COLORADO

Agricultural College, Ft. Collins, E. A. Lungren

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C E R E A L C O U R I E R

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 20 No. 32

December 31, 1928
Personnel (Dec. 16-31) and Project Issue

PERSONNEL ITEMS

Dr. James G. Dickson, agent in the cooperative cereal disease investigations that are being conducted at Madison, Wis., came to Washington on December 27 to confer with members of the Office staff and to prepare reports and manuscripts on the research conducted within the past year. Dr. Dickson went to New York to present two papers before the meetings of the American Phytopathological Society. He will return to Washington and remain for several days.

Dr. James R. Holbert, agronomist in charge of the cereal-disease investigations conducted in cooperation with Funk Bros. Seed Co., Bloomington, Ill., and the Illinois Agricultural Experiment Station, came to Washington on December 23 to confer with members of the Office staff and to prepare reports and manuscripts. At noon on December 26 he broadcasted a talk on the Department's noonday network program. His subject was Corn Seed Treatment. Dr. Holbert went to New York on the 27th to present a paper before the American Phytopathological Society, affiliated with the American Association for the Advancement of Science. He will return to Washington and remain for several days.

Jenkin W. Jones, superintendent of the Biggs Rice Field Station, Biggs, Calif., came to Washington on December 26. He left for New York on the following day to attend the meetings of the American Association for the Advancement of Science and affiliated societies. Upon his return to Washington Mr. Jones will spend several weeks in preparing reports and manuscripts on the cooperative investigations conducted at Biggs, Calif.

VISITORS

M. N. Demirjian, a dealer in agricultural implements at Aleppo, Syria, was an Office visitor on December 26.

R. D. Henson, of the seed department of the Eastern States Milling Corporation, Buffalo, N. Y., called at the Office on December 27.

MANUSCRIPTS AND PUBLICATIONS

85 A manuscript entitled "Correlation Studies with Inbred and Cross-bred Strains of Maize," by Merle T. Jenkins, was submitted on December 22 for publication in the Journal of Agricultural Research.

86 A brief manuscript entitled "Grain Sorghum Varieties in 1928," by John B. Sieglinger, was approved on December 28 for publication in the Oklahoma Farmer-Stockman.

87 A volume on "The Plant Rusts," by J. C. Arthur, in collaboration with F. D. Kern, C. R. Orton, F. D. Fromme, H. S. Jackson, E. B. Mains, and G. R. Bisby, will be published by John Wiley and Sons early in 1929. The work is in 10 chapters, namely:

I. General Nature of the Rusts

II. Historical Review

III. Development and Classification

IV. Cytology and Morphology

V. Dissemination and Geographic Distribution

VI. Physiology

VII. Specialization

VIII. Teratology and Pathology

IX. Economic Considerations

X. Methods of Investigation

The work will contain 185 illustrations and approximately 500 pages of text, with about 875 bibliographic citations. Dr. Arthur is collaborator with the Office of Cereal Crops and Diseases in connection with the preparation of this volume.

The following four articles, contributions from the Office of Cereal Crops and Diseases, appear in the December, 1928, issue of the Journal of the American Society of Agronomy:

Inheritance in Nodak and Kahla Durum Wheat Crosses for Rust Resistance, Yield, and Quality at Dickinson, North Dakota, by J. Allen Clark and Ralph W. Smith, Jour. Amer. Soc. Agron. 20 (12): 1297-1304. December, 1928.

Registration of Improved Wheat Varieties, III, by J. Allen Clark, J. H. Parker, and L. R. Waldron. Jour. Amer. Soc. Agron. 20 (12): 1318-1322. December, 1928.

Registration of Varieties and Strains of Oats, III, by T. R. Stanton, H. H. Love, and E. F. Gaines. Jour. Amer. Soc. Agron. 20 (12): 1323-1325. December, 1928.

Barley Varieties Registered, II, by H. V. Harlan, R. G. Wiggans, and L. H. Newman. Jour. Amer. Soc. Agron. 20 (12): 1326-1328. December, 1928.

RECENT DECISIONS OF THE COMPTROLLER GENERAL

(A-23703)
7 Comp. Gen. p. 52

ADVERTISING-BIDS-ACCEPTANCE OF OTHER THAN LOWEST-TIME AS AN ELEMENT

Where time of delivery is an important element, that fact should be clearly stated in the written or printed specifications, invitations for bids, or instructions to bidders, and there is no authority for acceptance of other than the lowest bid where the bidders were only advised orally that time of delivery was an important element and the higher bidder offered to make delivery at a much earlier date than did the low bidder.

(A-24441)
8 Comp. Gen. 166

TRAVELING EXPENSES AFTER DISCHARGE OR RESIGNATION

Traveling expenses of civilian employees upon discharge to their homes or place where they entered the service are personal and must be borne by the employees, except in cases in which the compensation is authorized to be fixed by administrative action and provision has been lawfully made by regulation or in the individual appointment for payment of such expenses as a part of their compensation, or where statutory provision is made for expenses in going to and returning from posts of duty.

(A-24730)
8 Comp. Gen. 183

TRANSPORTATION REQUESTS

Where the owners or operators of ferries at isolated points object or refuse to accept Government transportation requests, the traveler may make payment in cash and claim reimbursement therefor on his regular travel voucher with an explanatory note of the reason for failure to use transportation requests.

(A-24812)
8 Comp. Gen. 216

CONTRACTS - INCREASED COSTS - EXTRA WORK

Where a contract requires the installation of certain plumbing fixtures in accordance with Government master specifications and the contractor orders from a plumbing contractor a fixture in accordance with the specifications, but the plumbing fixture delivered is not in accordance with the specifications, there is no liability on the United States for extra work caused by the installation of the plumbing fixture delivered by the plumbing contractor.

(A-22856)
7 Comp. Gen. 753

SUBSISTENCE-FRACTIONAL DAYS

Where an employee on a per diem basis returns to headquarters at such time during the day as to entitle him to at least a fractional part of the per diem allowance for that day in accordance with paragraph 66 of the Standardized Government Travel Regulations and on the same day begins a new trip from which he returns to headquarters in less than 24 hours, his allowance for actual expenses for that portion of the first calendar day consumed by the second trip may not exceed that proportion of the maximum daily expense allowance as is represented by the fractional part of the day not covered by the per diem allowance for said day under the preceding trip.

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